ENVIRONMENTAL MONITORING IMPROVEMENT ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND ENVIRONMENT

OF THE

COMMITTEE ON SCIENCE AND TECHNOLOGY U.S. HOUSE OF REPRESENTATIVES

NINETY-EIGHTH CONGRESS

SECOND SESSION

MARCH 28, 1984

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ENVIRONMENTAL MONITORING IMPROVEMENT ACT

WEDNESDAY, MARCH 28, 1984

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE
RESEARCH AND ENVIRONMENT,
Washington, DC.

The subcommittee met, pursuant to call, at 2:15 p.m., in room 2325, Rayburn House Office Building, Hon. James H. Scheuer (chairman of the subcommittee) presiding.

Mr. SCHEUER. The Subcommittee on Natural Resources, Agriculture Research and Environment will come to order.

Before we get into the business of today, I want to welcome the members of the Machinists Guild who are honoring us with their presence, about 60 members, I understand.

I hope through the result of your visit here you will learn a little something about the way Congress operates. I am Congressman Jim Scheuer from New York; and there's Congressman George Brown of California, one of our most talented and creative Members of Congress.

This is the process by which Congress educates itself, listening to experts out there who know all there is to know. And they come and tell us what we ought to know and what we ought to do about the subject matter. So we are delighted to ha e you with us.

We held hearings on natural environment—national environmental monitoring last May. In fact, we have a bill in on a global environmental monitoring program that—have we had any hearings on that yet? We haven't had hearings on that yet, but we will be working on them. We have found out that with the telecommunications capability that we have developed, with satellite telecommunications, we can tell amazing things about what's going on on the land. We can tell about what crops are suffering a blight; where there is drought; where there is flooding; where there is process of deforestation; where there is a process of deforestation, and desertification; where we are losing agricultural land to desert, turning into desert.

We have the most amazing capability of interpreting from satellite photographs what is happening to our planet. And right now we are providing this information free from our sophisticated satellite capability to about 135 developing nations around the world. And it's absolutely indispensable to them in telling them when to plant, what to plant, when to harvest, when to irrigate. And in

general they depend now totally on this sophisticated flow of information that we feed them from our satellites—information by which we monitor various changes, natural changes, that are—and some unnatural changes, that are man made and man wrought—that were wreaking on this planet of ours. That is just by way of introduction.

So we now have a collection of diverse public and private programs in environmental monitoring in this country which are suffering from various problems: from design and operational inadequacies; from various parochialism and purpose, and in approach. They are focused too narrowly, many of them, and exclude many subjects that with very little extra effort they could include in their work.

There is a lack of comparability between one data system and another; and there's lack of coordination. There are too many systems badly coordinated, with too many gaps; and not the right kind of focus, not the right kind of holistic, comprehensive planning, and design.

And we have heard about these problems in our environmental monitoring time and time again, but over the decades the criticisms and the suggested solutions have been largely ignored. In spite of the fact that environmental monitoring is essential to implementation of many of our environmental laws, and is criticial for the detection and then the prevention of future environmental crisis, both here and around the world, consistent, reliable data to support environmental policymaking in this country still does not exist.

The draft bill that we are addressing today, that is the Environmental Monitoring Improvement Act of 1984, would create a commission to act as the prime coordinating body for the Nation's environmental monitoring efforts.

The commission would provide a forum for a broad cross section of views.

The mission of the commission, charge of the commission, would be to clearly define the operational changes and the administrative coordination that would be necessary to assure that cost-effective and statistically sound and reliable data are available to support environmental policymaking in this country; policymaking that will protect the health and the environment of the American people.

Specifically, the bill would require that the EPA, the Environmental Protection Agency, prepare an annual report containing the data which EPA and other agencies presently provide to the President's Council on Environmental Quality, the CEQ, for their annual environment quality report.

EPA would also be required to discuss in the report the progress that—that agencies are making both with respect to the commission's recommendations and to updating the inventory of monitoring programs as needed.

The legislation would also assure that national monitoring strategy is consistent with U.S. involvement in the international, global monitoring programs that I mentioned before, that we are heavily involved in.

This afternoon we will hear comments on the draft legislation from several of the key agencies that would be represented on the commission. We will also hear from witnesses representing State and regional programs, and representatives of the corporate sector, from academia, the Nation's colleges and universities, and from various nonprofit environment groups.

[The prepared opening statement of Mr. Scheuer follows:]

OPENING STATEMENT
HONORABLE JAMES H. SCHEUER
MARCH 28, 1984

THE SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND ENVIRONMENT WILL COME TO ORDER.

THE SUBCOMMITTE HELD HEARINGS ON NATIONAL ENVIRONMENTAL MONITORING LAST MAY.

DURING THOSE HEARINGS WE HEARD A LITANY OF PROBLEMS THAT PLAGUE THE PRESENT MONITORING SYSTEM IN THE U.S.

WE LEARNED THAT THE PRESENT SYSTEM IS AN AD HOC COLLECTION OF DIVERSE PUBLIC AND PRIVATE PROGRAMS, MANY OF WHICH SUFFER FROM:

-- DESIGN AND OPERATIONAL INADEQUACIES;
-- PAROCHIALISM IN PURPOSE AND APPROACH;
-- LACK OF COMPARABILITY OF DATA FROM ONE SYSTEM TO ANOTHER;
AND, ABOVE, ALL,
-- LACK OF COORDINATION.

MOREOVER, WE HEARD THAT ALTHOUGH THESE PROBLEMS HAVE BEEN RECOGNIZED AND DEFINED FOR THE PAST DECADE, SEVERAL GENERATIONS OF RECOMMENDATIONS FOR SOLVING THESE PROBLEMS HAVE BEEN LARGELY IGNORED.

IN SPITE OF THE FACT THAT ENVIRONMENTAL MONITORING IS ESSENTIAL TO THE IMPLEMENTATION OF ALL MAJOR ENVIRONMENTAL STATUTES AND IS CRITICAL FOR THE DETECTION OF FUTURE ENVIRONMENTAL CRISES, CONSISTENT, RELIABLE DATA TO SUPPORT ENVIRONMENTAL POLICY-MAKING IN THIS COUNTRY STILL DO NOT EXIST.

THE DRAFT BILL THAT WE ARE ADDRESSING TODAY, THE "ENVIRONMENTAL MONITORING IMPROVEMENT ACT OF 1984 WOULD CREATE A COMMISSION TO ACT AS THE PRIME COORDINATING BODY FOR THE NATION'S ENVIRONMENTAL MONITORING EFFORTS.

THE COMMISSION WOULD PROVIDE
A FORUM FOR A BROAD
CROSS-SECTION OF VIEWS.

ITS CHARGE WILL BE TO
DEFINE CLEARLY THE
OPERATIONAL CHANGES
AND ADMINISTRATIVE
COORDINATION NECESSARY
TO ASSURE THAT COST-
EFFECTIVE, STATISTICALLY
SOUND DATA ARE
AVAILABLE TO SUPPORT
ENVIRONMENTAL POLICY-
MAKING IN THIS COUNTRY.

SPECIFICALLY, THE BILL WOULD REQUIRE THAT EPA PREPARE AN ANNUAL REPORT CONTAINING THE DATA WHICH EPA AND OTHER AGENCIES PRESENTLY PROVIDE TO CEQ (COUNCIL ON ENVIRONMENTAL QUALITY) FOR CEQ'S ANNUAL ENVIRONMENTAL QUALITY REPORT.

EPA WOULD ALSO BE REQUIRED TO DISCUSS IN THE REPORT THE PROGRESS THAT AGENCIES ARE MAKING WITH RESPECT BOTH TO THE COMMISSION'S RECOMMENDATIONS AND TO UPDATING THE INVENTORY OF MONITORING PROGRAMS AS NEEDED.

THE LEGISLATION WOULD ALSO ASSURE THAT NATIONAL MONITORING STRATEGY IS CONSISTENT WITH U.S. INVOLVEMENT IN INTERNATIONAL AND GLOBAL MONITORING PROGRAMS.

THIS AFTERNOON WE WILL
HEAR COMMENTS ON
THE DRAFT LEGISLATION
FROM SEVERAL OF THE
KEY AGENCIES THAT
WOULD BE REPRESENTED
ON THE COMMISSION,
FROM WITNESSES REPRESENTING
STATE AND REGIONAL
PROGRAMS, AND FROM
REPRESENTATIVES OF
THE CORPORATE SECTOR,
ACADEMIA AND ENVIRONMENTAL
GROUPS.

Mr. SCHEUER. Now, before we continue, we don't have a minority member, is my distinguished colleague from California—OK. We will go right straight ahead. But we are in a time bind this afternoon.

We want to finish up as close to 4 o'clock as possible, we have some important votes that we get to, so we are going to hold each panel to 40 minutes; each speaker and each of the panels will have 5 minutes and then we will save 20 minutes on each panel for discussion. But we are going to hold rather strictly to the 5-minute limitation. We are going to hold rather strictly to the 5-minute limitation so that we can have a chance to ask you questions.

So what I suggest is, rather than read your testimony, just sit back and chat with us as if we were in your living room. Your entire testimony, as prepared, will be printed in full at the point in the record at which you make your remarks, so that you know that your views in all of their detail will be preserved and printed.

So with that, let us proceed to the testimony—5 minutes each witness, and then we will have 20 minutes for each panel for discussion.

Panel No. 1, let's start with Dr. Milton Russell, Assistant Administrator for Policy, Planning, and Evaluation of the EPA. We are delighted to have you, Dr. Russell.

STATEMENTS OF DR. MILTON RUSSELL, ASSISTANT ADMINISTRATOR FOR POLICY, PLANNING, AND EVALUATION, U.S. ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY LEWIS CRAMPTON, DIRECTOR, OFFICE OF MANAGEMENT SYSTEMS AND EVALUATION; DR. ANDREW ROBERTSON, DIRECTOR, NATIONAL MARINE POLLUTION PROGRAM OFFICE, NATIONAL OCEAN SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE, ACCOMPANIED BY CHARLES N. EHLER, CHIEF, OCEAN ASSESSMENTS DIVISION, NOAA; ALLAN THOMAS, DEPUTY ASSISTANT ADMINISTRATOR, OCEANIC AND ATMOSPHERIC RESEARCH, NOAA; AND ALAN HECHT, DIRECTOR, NATIONAL CLIMATE PROGRAM OFFICE; A. ALAN HILL, CHAIRMAN, COUNCIL ON ENVIRONMENTAL QUALITY; AND DALLAS L. PECK, DIRECTOR, U.S. GEOLOGICAL SURVEY, ACCOMPANIED BY PHILIP COHEN, CHIEF HYDROLOGIST, WATER RESOURCES DIVISION, U.S. GEOLOGICAL SURVEY

Dr. RUSSELL. Thank you, Mr. Chairman. I am pleased to be here to testify on the whole question of monitoring improvement and the legislation that you have before you today.

Mr. SCHEUER. Why don't you pull your mike just a little bit closer?

Dr. RUSSELL. All right, very good.

I do want to remark that I have with me Mr. Lewis Crampton, who's Director of the Office of Management Systems and Evaluation at EPA, and he was the chairman of EPA's environmental monitoring task force and I thought he might have some special insights that you might find of interest later on during the course of the panel.

As you have said already, you have our statement, and all I want to do is make a few comments and a few highlights and stay carefully within your 5-minute limitation.

Monitoring is extremely important to us at EPA. We are interested in environmental results. And if you are interested in environmental results, you have to know where you've been, you have to know where you are. You have to know what kinds of programs are working; you have to know what kinds of programs are not working where it counts—where those programs are affecting people in the environment. And you have to know what problems remain and where there are data gaps and other issues that need to be dealt with.

In sum, we need to be able to act smarter in the environment; we need to be able to act more effectively in the environment. And to do that we need to know what's going on out in the environment. And, consequently, we think the whole question of environmental monitoring, and improving the quality of the environmental monitoring that we have, could not be more important, and could not be more seriously being addressed as far as our Agency is concerned.

Actually, I have the policy, planning, and evaluation shop, and I think that monitoring and good data are the foundation of what you are talking about when you are talking about planning for the future, and the problems that are going to be coming before us as as we look ahead.

Now, your committee hearings last May—which I've looked at, though I wasn't at the Agency at that time—helped start something that the new team at EPA was already dedicated to doing, and that is to say, taking seriously the question of environmental monitoring and trying to improve it.

We have established the environmental monitoring task force which has attempted to look forward and try to see where the problems are and how we might go about doing something about them.

We have now developed an Agency policy statement on environmental monitoring, which the Deputy Administrator announced last December 23, which illustrates and describes the importance that we place on improving the quality of that data.

Each of our programs have been mandated to provide a strategy for both short-term and long-term environmental monitoring. A draft of that's due in the middle of next month; the final piece of that's due in the middle of May. And in developing those strategies, for which there's strict guidelines of performance, they're using the States; they are bringing in private sector in some cases, and trying to integrate the environmental programs that are going on there as well.

We have developed our integrated toxics—toxics integration task force to look at some of those same issues.

I think that we have demonstrated, and we have underway plans to bring together the oversight of the monitoring function into a high-level office within the Agency in order to provide continuing and long-term oversight to make sure that the thing—the monitoring that gets done, gets done effectively, gets done efficiently, and with a minimum of overlap.

Last summer, we worked and produced the environmental monitoring reports from each of the regional offices of EPA. And next

month or a little bit later we will be coming out with a national environmental report, which will bring together all the data we have, which, importantly, will show us what we know; but more importantly, will show us what we don't know and where we need to start working even more stringently than we have in the past to do it.

So, I think there's a lot that's going on in the Agency that's responsive to the interests that you suggested last May and to those that we have felt here.

I think there are a lot of shortcomings in the monitoring program. I think it's clear that we already know many of those problems and I think that, again, hearings and others have determined what some of those are.

So what we think we ought to be focusing on in terms of new initiatives is not additional studies about the problems, but how do we actually get things implemented, and get things done. And I think that that is where focus and the Agency is actually getting out there and doing something.

And I will be happy to answer any further questions that you have.

[The prepared statement of Dr. Russell follows:]

STATEMENT OF
MILTON RUSSELL
ASSISTANT ADMINISTRATOR
FOR POLICY, PLANNING, AND EVALUATION
U.S. ENVIRONMENTAL PROTECTION AGENCY

BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES,
AGRICULTURE RESEARCH AND ENVIRONMENT
COMMITTEE ON SCIENCE AND TECHNOLOGY
HOUSE OF REPRESENTATIVES

MARCH 28, 1984

I am pleased to be here today to testify on environmental monitoring. With me today is Lewis Crampton, Director for the Office of Management Systems and Evaluation. Mr. Crampton is chairman of EPA's Environmental Monitoring Task Force.

From our perspective, environmental monitoring is essential for effectively planning, implementing, and evaluating our programs. We recognize that improvements need to be made in both national and international environmental monitoring.

The deficiencies of national and international monitoring programs are well understood. Too often the quality of monitoring data suffers from the failure to use scientific principles in design, operation, and analysis. Institutional barriers and poor coordination lead to duplicative and inefficient monitoring efforts. Our environmental programs would be more effective and economical if there were better

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monitoring data that could be used to identify significant environmental "hot spots" or determine the sources of ground water pollution, for example.

Questions have been raised about the lack of significant progress made towards correcting the many problems in environmental monitoring. While we still have a long way to go, I believe we have made notable progress over the past several years. During the hearings on monitoring held by this Subcommittee in May and June of 1983, we reported on a number of steps we have taken to improve our monitoring activities. In particular, we have made substantial progress in monitoring criteria pollutants in ambient air. In addition, we recently completed a national survey with the U.S. Fish and Wildlife Service to determine water quality based on the health and viability of fisheries.

In addition, we are pleased to report that since the monitoring hearings last Spring, EPA has undertaken a concerted Agencywide effort to review and strengthen our monitoring programs. To oversee this initiative, the Deputy Administrator established an Environmental Monitoring Task Force comprised of EPA and State representatives. The Task Force developed an Environmental Monitoring Policy which the Deputy Adminstrator issued in December 1983. In addition to setting broad goals and objectives for the Agency's monitoring programs, the

Policy requires that each program office develop an environmental monitoring strategy. The goal of the strategies is to produce reliable environmental data so that program offices can plan and implement their programs to achieve the greatest environmental gains and be able to measure the results. Final strategies are due in May of this year. While we have made a good start, we still have much to do. First we must ensure that the strategies adequately address key issues and then follow through with their implementation.

We recognize that EPA's monitoring programs represent only a small fraction of the national investment in monitoring and that we could increase the returns for Federal, State, local and industry monitoring efforts through better coordination. Instead of analyzing water samples only for conventional water pollutants and a few other selected substances, for example, Federal and State water agencies and others responsible for monitoring water could expand their analyses. By making no further investment in sampling and a little more for analysis, we could substantially improve our understanding of what toxic substances may be contaminating our waters. This would be particularly helpful for assessing the extent that pesticides applied to agricultural lands are contaminating our lakes and streams.

Through the development of the monitoring strategies, program offices should identify opportunities for better coordination both within EPA's own monitoring programs and with other programs. Most EPA program offices are inviting representatives of relevant State and local agencies to participate in developing the strategies. While still at the early stages of development, some program offices have also included industry and environmental group representatives.

Monitoring is essential to managing for environmental results. Without good data, we cannot measure our environmental progress or know where we have failed so that we can modify our programs accordingly. Ideally, we should be confident that our efforts are directed towards the most significant environmental problems. To this end, our data must be of consistently high quality, timely, and credible.

Last summer EPA completed its first Agencywide effort to analyze available environmental data. Specifically, each of the ten EPA Regions produced a comprehensive report called an Environmental Management Report. The reports describe the status of the quality of our air, water, and land on a regional basis and determine what actions we need to take to solve our most significant current and emerging environmental problems. The reports define an environmental baseline to measure the effectiveness of our programs and to shape EPA's future agenda.

We are making environmental monitoring data an integral part of our planning and management processes. The Environmental Management Reports illustrate the extensive use the Regions make of available monitoring data to determine environmental trends, evaluate progress, and anticipate future problems. In addition, we are already making considerable progress towards correcting the shortcomings of our current programs. We are making many improvements in monitoring without additional resources. Improving the coordination among programs and the compatibility and quality of monitoring data will result in significant benefits with relatively few resource requirements. Other problems such as lack of "early warning" data from monitoring the amounts of toxic contaminants in shellfish or human tissue samples, for example, demand that we carefully decide priorities among monitoring programs. To ensure that we factor these considerations into our internal budget decisions, we have asked each program office to identify its needs as part of the monitoring strategies to be submitted in May.

As the Subcommittee is aware, many studies have been conducted in the past about the nation's monitoring programs, including studies by the National Academy of Science, Council on Environmental Quality (CEQ), and the General Accounting Office. In addition, the hearings that your Subcommittee

has held have identified many persistent problems. Because the shortcomings of the current state of monitoring are well documented, we believe any future efforts ought to focus primarily on steps to improve national programs rather than duplicate past critiques. This is the focus of the efforts initiated by our Environmental Monitoring Task Force.

This leads to consideration of the concept of a national commission on environmental monitoring. National commissions are one way to heighten the awareness of complex issues such as environmental monitoring and to provide a better understanding of problems and possible solutions. As stated above, part of this process has already taken place -- the shortcomings of the current state of monitoring are well documented.

There are additional drawbacks to the commission concept as well. We and many other Federal agencies are now addressing the environmental monitoring problem. By giving any new national commission purview over monitoring policy issues and programs, ongoing activities to define and implement new monitoring policies would be suspended awaiting new direction. EPA's initiatives would inevitably be set back, at least temporarily. Finally, setting up a commission would be creating a new organization when there are existing groups capable of performing its

intended functions. Therefore, we cannot support the idea of establishing a national commission on environmental monitoring.

We also have a couple of comments for the Subcommittee's consideration about the concept of an annual report on environmental monitoring. First preparing an inventory, description, and evaluation of national and relevant international monitoring programs should be part of an overall effort that draws extensively from previous reports such as those prepared by CEQ.

Second, as you are probably aware, EPA works with CEQ on their preparation of the President's Annual Environmental Report. EPA provides CEQ with data from the Agency during the six months they take to prepare the report. Any new comprehensive report may actually impede production of the President's Report and in some respects be redundant.

This concludes my general comments. I would be glad to answer any questions the Subcommittee has.

Mr. SCHEUER. Very good. I am sure we will have questions for you——

Dr. RUSSELL. Fine.

Mr. SCHEUER [continuing]. When your three colleagues have finished their testimony.

All right, we will go to Dr. Andrew Robertson, Director of the National Marine Pollution Program Office of the National Oceanic and Atmospheric Administration.

Dr. ROBERTSON. Thank you, Mr. Chairman.

I would like to, first of all, point out that we have three members of the NOAA staff accompanying me today: Mr. Charles Ehler, chief of our Ocean Assessments Division, whose program is involved with marine monitoring; Dr. Allan Thomas, Deputy Assistant Administrator for NOAA's Office of Oceanic and Atmospheric Research, and Dr. Alan Hecht, Director of the National Climate Program Office. And I am sure all of us would be glad to answer any questions that come up later.

At the onset, I would like to stress that NOAA shares the concern that the subcommittee has expressed about adequate coordination of the Nation's monitoring programs. However, from our perspective, we feel that possibly there are sufficient mechanisms in existence to do this now. That isn't to say that we think that the mechanisms are maybe all being used as well as they could.

And to give you an illustration of what I am talking about, I would like to very briefly mention three of the things that NOAA's doing; and these are just examples, there are a number of others.

One, the first one would be the program I am involved in, the National Marine Pollution Program. And we, in this, are called upon to coordinate the preparation and implementation of a comprehensive 5-year Federal plan for ocean pollution research, development, and monitoring. And these plans describe and assess pollution research and monitoring activities conducted by all the Federal agencies.

We also produce an appendix to this that details the different programs, including—it gives us a catalog of the monitoring programs being conducted by the Federal Government related to marine pollution.

The second plan, the most recent one, emphasizes the importance of monitoring and of quality assurance of this monitoring. And we have now been taking steps to implement these recommendations.

The third plan, which is due to Congress in September 1985, will also, I am sure, be very involved with monitoring.

The second program that I would like to just briefly mention is the National Climate Program, and this assigns to NOAA the responsibility to develop a program to assist the Nation in understanding and responding to climate processes and their implications. The Climate Office oversees a well defined and coordinated program which consists of domestic and international activities of research, monitoring again, assessment, and utilization of climate information.

Finally, just a brief mention of the Acid Precipitation Program which requires NOAA to coordinate the research and monitoring activities of Federal agencies conducting research under the Na-

tional Acid Precipitation Assessment Program. And we have 12 Federal agencies that are involved in this activity.

Mr. Chairman, NOAA has, I believe, made a commitment and substantial progress toward improving the design, conduct, and coordination of environmental monitoring programs and their interaction with other Federal, State, and local agencies, as well as internationally.

In summary, I would say that it seems to us that much, if not all, of the intent of the proposed legislation is currently being met, or could be met, through existing Federal programs and interagency coordinating mechanisms.

We believe that the President's current annual "Report on Environmental Quality" prepared by CEQ could adequately address environmental quality monitoring comprehensively and effectively. Thus, we question the establishment of a National Commission on Environmental Monitoring. We feel it might well result only in another layer of Federal bureaucracy with unspecified benefits. The Commission would also essentially duplicate, we feel, mechanisms that are already in existence and ones that could be taken advantage of to further the purposes of the act.

That concludes my testimony and, of course, we would be glad to answer any questions.

[The prepared statement of Dr. Robertson follows:]

STATEMENT
OF
DR. ANDREW ROBERTSON
DIRECTOR, NATIONAL MARINE POLLUTION PROGRAM OFFICE
NATIONAL OCEAN SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH
AND ENVIRONMENT
COMMITTEE ON SCIENCE AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

MARCH 28, 1984

Mr. Chairman and Members of the Subcommittee:

I am Andrew Robertson, Director of the National Marine Pollution Program Office (NMPPO), a staff office within NOAA's National Ocean Service (NOS). Accompanying me today are Mr. Charles N. Ehler, Chief of NOAA's Ocean Assessments Division (OAD), Dr. Allan Thomas, Deputy Assistant Administrator for NOAA's Office of Oceanic and Atmospheric Research (OAR), and Dr. Alan Hecht, Director of the National Climate Program Office (NCPO). As you are aware, Mr. Ehler testified previously before your subcommittee regarding the scope and direction of NOAA's marine monitoring programs. My testimony today will address environmental monitoring and NOAA's environmental monitoring program. Detailed information about some of our programs is being provided to supplement my oral testimony.

At the outset, I would like to stress that NOAA shares the Subcommittee's concern about adequate coordination and cost-effective implementation of the Nation's environmental monitoring efforts. From our perspective of concern about the oceans and atmosphere, we believe, however, that sufficient mechanisms have already been established to ensure that monitoring programs are effectively coordinated across the Federal government. In order to illustrate the existence of adequate coordination mechanisms among Federal monitoring programs, I would like to note three areas of statutory environmental monitoring for which NOAA has been assigned lead responsibility to coordinate activities across the Federal government:

(1) The National Ocean Pollution Planning Act (P.L. 95-273) requires NOAA to coordinate the preparation and implementation of comprehensive five-year Federal Plans for Ocean Pollution Research, Development and Monitoring. These Plans describe and assess pollution research and monitoring activities conducted or supported by Federal agencies and departments and are supplemented by appendices which provide detail information on individual programs and projects conducted by the Federal agencies. The second and current Federal Plan for Ocean Pollution Research, Development and Monitoring addresses the significant Federal marine pollution monitoring activities and emphasizes the importance of an effective quality assurance program. The third revision of the Federal Plan, which is due to the Congress

during September of 1985, will contain recommendations to improve further the coordination of Federal marine pollution-related monitoring programs.

Coordination efforts now undertaken to implement the Ocean Pollution Planning Act involve senior representatives of eleven Federal departments and agencies, the Office of Management and Budget, and the Executive Office of Science and Technology Policy. An interagency committee has been chartered under the Office of the President's Science Advisor. The interagency Committee on Ocean Pollution, Research, Development, and Monitoring (COPRDM) is chaired by NOAA's Deputy Administrator, and operates under the Federal Coordination Council for Science, Engineering and Technology.

(2) The National Climate Program Act (P.L. 95-367) assigned NOAA the responsibility to develop a program to assist the nation in understanding and responding to climate processes and their implications. The National Climate Program Office oversees a well-defined and coordinated program which consists of domestic and international activities in research, monitoring, assessment, and utilization of climate information. This program involves research and monitoring activities of 17 Federal agencies.

Guidance is provided by a Climate Program Policy Board; and an Interagency Working Group meets frequently to coordinate and interrelate the various agency climate efforts. Two examples of

coordinated monitoring activities under the National Climate Program are Global Monitoring for Climate Change (GMCC), a network of monitoring stations in Hawaii, American Samoa, Alaska, and the South Pole; and the Solar Radiation Program, which consists of 31 monitoring stations across the U.S., Guam, and Puerto Rico.

(3) The Acid Precipitation Act of 1980 (P.L. 96-294) requires NOAA to coordinate the research and monitoring activities of Federal agencies conducting research under the National Acid Precipitation Assessment Program.

Twelve Federal agencies are members of the Interagency Task Force on Acid Precipitation which reviews agency budgets and activities, seeking to avoid duplication or gaps in effort. NOAA, EPA, and the Department of Agriculture jointly chair the Task Force. Ten research task groups operate under the Task Force at the working level, including university participants as well as agency representatives. The efforts of several of these task groups focus on monitoring. For example, the National Trends Network of the Acid Precipitation Assessment Program consists of an acid precipitation monitoring site in every state.

The proposed legislation would duplicate existing coordination mechanisms at the Federal level, as indicated by these examples.

Mr. Chairman, NOAA has made a commitment and substantial progress toward improving the design, conduct, coordination, and quality control of environmental monitoring programs. Interaction with other Federal, state, and local agencies, as well as international organizations, is an integral part of the foundation of our program.

In summary, Mr. Chairman, it seems to us that much if not all of the intent of any bill is currently being met through existing Federal programs and interagency coordinating mechanisms. We believe that the President's current Annual Report on Environmental Quality prepared by CEQ could adequately address environmental quality monitoring comprehensively and effectively. We oppose the establishment of a National Commission on Environmental Monitoring. It could result in yet another layer of activities in the Federal government with unspecified benefits. The Commission would also essentially duplicate the environmental monitoring coordination mechanisms already in place.

This concludes my testimony. I will be happy to answer any questions which you may have. Thank you.

NOAA's Environmental Monitoring Programs

In the context of the definition of "environmental monitoring" I would like to briefly describe related NOAA activities under two categories: (1) marine monitoring programs; and (2) atmospheric monitoring programs.

Marine Monitoring Programs

Several of the marine monitoring efforts that follow were included as part of NOAA's previous testimony to your Committee. These programs are administered by the Ocean Assessment Division (OAD) with the exception of the Northeast Monitoring Program which is jointly administered by OAD and NOAA's National Marine Fisheries Service (NMFS) and the Microconstituents Program which is administered solely by NMFS.

NOAA has already begun to design and implement a series of efforts to improve the effectiveness of our nation's estuarine, coastal and open-ocean monitoring activities. These efforts have been directed at the following objectives: (1) to identify and evaluate existing environmental quality monitoring programs and their data sets; (2) to establish a NOAA-wide program to assure the quality of environmental measurements; (3) to evaluate the applicability of current and proposed techniques for measuring environmental quality parameters; (4) to evaluate and coordinate Federal marine pollution monitoring programs; (5) to inventory and develop national data bases and produce graphic products of

coastal pollutant discharges and living marine resources at risk; (6) to monitor environmental parameters and living marine resources off the northeastern coast of the United States; and (7) to conduct a national program to assess the status and long-term trends of coastal and estuarine environmental quality. These efforts directly address some of your goals.

We are currently developing a national inventory of coastal and estuarine pollution monitoring programs conducted by local, state and Federal governments and the private sector. For the approximately 350 programs identified to date, the inventory will include program purpose, type of data collected, data quality and format and data availability. Approximately 80 of these programs are expected to contain data meeting NOAA's quality assurance criteria and to be useful in a national assessment of marine environmental quality.

NOAA has established a Quality Assurance (QA) Program to determine the degree of confidence associated with monitoring data collected by NOAA scientists, grantees and contractors, and to document current QA practices. These activities are coordinated with EPA, the National Bureau of Standards (NBS), and with appropriate international organizations such as the International Council for the Exploration of the Seas (ICES).

We are also evaluating measurement techniques for monitoring and assessing marine environmental quality. This effort consists of an inventory and systematic evaluation, by a select group of

experts, of monitoring techniques with emphasis on the utility, applicability, limitations and cost-effectiveness of each method in describing environmental quality status and trends.

With the objective of developing a coherent, national ocean assessment program, we are currently reviewing existing data bases and assessment capabilities, including data from pollution monitoring programs as well as use of information gathered through satellite technologies. We are also placing new emphasis on the synthesis of existing marine environmental quality monitoring data from both NOAA and a variety of other agencies. We are also organizing the best available information on the status of environmental quality of our coastal waters and will publish a national atlas on this topic in 1985.

NOAA's Northeast Monitoring Program (NEMP) is now in its fourth year of operation as a large-scale field monitoring program. Annual reports from this program have described the general health of the marine environment from the Canadian border to Cape Hatteras, with specific descriptions of contaminants in seabed sediments, particulate-borne contaminants in the water column, and effects of these contaminants on living biota.

Another effort, the Microconstituents Program of NMFS is designed to determine the types and levels of contaminants in the tissues of fishery products which are used for recreational and industrial uses as well as for human consumption. This information is available to Federal and state public health authorities, the seafood industry, and fishery managers.

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The final marine monitoring activity which I would like to emphasize is NOAA's National Status and Trends Program. This new initiative will include a series of activities to quantify the current status and long-term, temporal and spatial trends of key contaminant concentrations and biological indications of adverse effects in U.S. coastal and estuarine environments. Key questions which the program is specifically directed at include: (1) what are the current environmental conditions of the Nation's coastal waters; and (2) are these conditions getting better or worse? The program will focus on sites that represent integrated accumulations of contaminants and on biological responses to these stresses. Measurements will be taken from locations at priority sites along the East Coast, Gulf of Mexico and West Coast. The critical aspect of this new environmental monitoring program is the commitment to a long-term, nationally uniform, intercomparable set of environmental quality measurements.

Atmospheric Monitoring Programs

The National Climate Program Office (NCPO) coordinates all Federal climate monitoring and research and is a focal point for U.S. participation in international climate programs. Since the proposed bill is directed at specialized environmental monitoring networks, the following projects conducted by NCPO are particularly relevant.

(1) Global Monitoring for Climate Change (GMCC) - This program consists of a network which includes stations at Mauna Loa, Hawaii; American Samoa; Point Barrow, Alaska; and the South Pole. Measurements from these sites are used to determine whether gases and particulates put into the atmosphere by human activities or by natural causes are significant enough to change climate.

A most important aspect of GMCC is its cooperative programs with other institutions, mainly universities. International activities include association with U.S. - U.S.S.R. Working Group VIII on Environmental Protection, continuing interchanges of personnel with CSIRO Division of Atmospheric Research (Australia) and consultation work with the international Background Air Pollution Monitoring (BAPMON) Program. Since GMCC is part of a permanent agency of the United States Government it is the logical group to perform those monitoring tasks, here or abroad, which require the long-term stability provided only by a government agency.

(2) Solar Radiation Program -- This program involves a network of 31 stations covering the U.S., Guam and Puerto Rico.

(3) Atmospheric Carbon Dioxide Data -- Information developed from this program provides precise carbon dioxide data which closely correlates with an increasing growth rate in use of fossil fuels. All countries exchange temperature data both from the surface and aloft. NOAA is collaborating with groups in the United Kingdom and the Soviet Union in delineating global temperature trends.

(4) Trace Gas Observations -- This program provides measurements of ozone and chlorofluorocarbons. There is close association and exchange of data, with monitoring efforts in other countries, and in particular with the Australian station at Cape Grim, Tasmania.

NOAA's National Weather Service (NWS) also participates in several environmental monitoring programs in cooperation with other Federal agencies and programs. These include programs designed to monitor solar radiation, solar ultraviolet radiation, ozone, ion exchange, and atmospheric turbidity.

Environmental monitoring is an essential component of climate services and research. Most research builds on world-wide measurements and observations. Although there are obvious measurement deficiencies and parts of the system require modernization, overall needs in climate monitoring have been well-defined.

Mr. SCHEUER. Thank you very much.

Mr Hill.

Mr. HILL. Thank you, Mr. Chairman. Wait a minute—is that? That should be better.

Mr. SCHEUER. The Honorable A. Alan Hill, Chairman of the Council on Environmental Quality. The witness has appeared before our committee several times before, whose testimony we have always found very interesting.

Mr. HILL. Thank you very much, Mr. Chairman. Let me again commend you and the committee in looking at what is a very serious, very important subject area, as we address the general question of environmental quality in our Nation.

Last year in my testimony I hit the high points of the report that had been completed in 1980 by CEQ and the task force that worked on the subject that touched on the questions of coordination, quality assurance of data, analysis across programs and media, and the budget decisionmaking process.

I would have had with me today Dr. Harvey Doerksen, who is on CEQ's staff and is working on environmental data and monitoring, except Dr. Doerksen has been in California with regard to our Water Resources Research Center Study that was part of a special appropriation last year. Dr. Doerksen has been diverted temporarily from his monitoring assignment. Because CEQ's staff is small, we had to put our monitoring work on hold to start the water study. Now, CEQ involved many other Federal agencies in developing the statement of work for the water study.

And I think that exercise that we have just been through indicates the difficulty and also the need for better coordination. In designing our requests for proposals for that study, we consulted some 22 Federal agencies to make sure we had clear and coordinated input, and that included the—the three mandated by the Congress: the Geologic Survey, EPA, and the Army Corps of Engineers, as well as others.

We are concerned, however, that a commission might inhibit the progress that we see starting to be made. If the—a report became an exercise as a report and not something that was directed toward better management of an environmental monitoring system, we would be very concerned.

Now, a report which headed toward, first, a statement of goals and; second, a statement of how far along the way we are in progress to achieving those goals, would be something else. We would like to have the opportunity, and intend to respond as your bill is introduced. In the meantime, my staff has provided informal comments to your staff on the proposal.

I have stated my concerns; other matters are enumerated in greater detail in my formal testimony, and I am available to answer your questions.

[The prepared statement of Mr. Hill follows:]

STATEMENT OF A. ALAN HILL
CHAIRMAN
COUNCIL ON ENVIRONMENTAL QUALITY
BEFORE THE SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE
RESEARCH AND ENVIRONMENT
COMMITTEE ON SCIENCE AND TECHNOLOGY
UNITED STATES HOUSE OF REPRESENTATIVES

MARCH 28, 1984

Good afternoon. My name is A. Alan Hill. I am Chairman of the Council on Environmental Quality (CEQ). CEQ was established by the National Environmental Policy Act to advise the President on environmental issues, to oversee the environmental impact statement process, to report on the state of the environment, and to fulfill a number of other responsibilities in the environmental area.

I wish to thank the Subcommittee for keeping us informed of your activities leading to the potential introduction of a bill aimed at improving the Nation's environmental monitoring programs.

CEQ supports efforts in the Congress, the Executive branch and other entities to bring about improvements in the way environmental monitoring programs go about obtaining data, and in the way that the various programs are coordinated to achieve cost-effective results.

We know there are problems in environmental monitoring. I discussed some of these with the Subcommittee in my testimony last Spring. There was general consensus among the participants in those hearings concerning the nature of environmental monitoring problems. That consensus, in itself, is a most

significant finding. Understanding the problem is a major step toward its solution.

Some important things are beginning to happen that will bring about partial solution of the problems. For example, the Environmental Protection Agency has articulated an environmental monitoring policy. Under this policy, the several units of the agency will develop monitoring strategies aimed at improving quality control, greater efficiency and better coordination also. CEQ has begun efforts to develop an inventory of the various Federal environmental monitoring programs.

We will be glad to evaluate any environmental monitoring bill that is introduced into the Congress in terms of whether it would enhance such emerging agency problem-solving efforts or hinder or delay them. Newly established entities, such as a National Commission with a final report due at a specified time, would tend to put other monitoring improvement activities "on hold," so to speak, while awaiting the recommendations of the Commission. It may also impose time and manpower burdens on the agencies while it gears up. These additional high-level efforts would not necessarily expedite improvements in environmental monitoring, but could actually impede necessary improvements.

Environmental monitoring is an extremely broad and complex issue, encompassing many diverse areas from human health to wildlife resources, local to international concerns, governmental to private sectors, and a range of scientific discliplines.

One danger of efforts to deal with the problems is the temptation to take on too much. The hazard is that problem-solving efforts may become diffuse and shallow.

We believe that significant improvements to environmental monitoring can be realized administratively by focusing on specific problem areas where direct results can be achieved. Examples include developing:

- Procedures for measuring the successes and failures of specific environmental control programs to meet stated goals; and
- Quality control standards and interagency agreements for maintaining them.

We feel strongly that the primary objective of any new proposals to improve environmental monitoring should be to solve problems. There is no need to begin new studies of what the problems are. We have done that. It is time to solve the problems. That is what we and the other agencies represented here today are trying to do.

I thank you for the opportunity to address the Subcommittee. I will be pleased to respond to any questions you may have.

Mr. SCHEUER. Thank you very much.

Now we will hear from Dallas Peck, Director of the U.S. Geological Survey.

Mr. PECK. Thank you, Mr. Chairman, I appreciate the invitation to attend the hearings.

I am accompanied today by Mr. Phil Cohen, Chief Hydrologist of the U.S. Geological Survey, the head of our Water Resources Division.

I want to—in my testimony today I want to address one—one aspect of environmental monitoring and that's water. We have—USGS has a principal responsibility in Federal Government for—for appraising the Nation's water resources, and that includes hydrologic monitoring. We have no management responsibility, regulatory, or developmental responsibilities—our sole product is scientific information.

My written testimony highlights our—our water monitoring activities and our—and our water data acquisition coordinating activities.

I am going to skip rather briefly over the water data monitoring activities. We are the largest single source of information on the quantity of the Nation's ground and surface water. We gather about 70 percent of the stream flow and river stage data.

We are only one of several major organizations that gather surface and ground water quality data. Considerable data is gathered by EPA, NOAA, Department of Agriculture, and particularly State and local organizations.

We are responsible for coordinating water data acquisition activities of all Federal agencies under the Office of Management and Budget—Budget Circular A-67. We have coordinated those activities since 1964.

Through our Office of Water Data Coordination we work closely with 32 Federal agencies, who—and also who are members of our Interagency Advisory Committee on Water Data. And we also work with a non-Federal advisory committee—Committee on Water Data for Public Use.

In the last few years, numerous organizations have either started new water quality monitoring activities or greatly expanded their previous ones. New coordinating activities are needed to bring these activities into greater harmony. To accomplish this, the Survey is using its coordinating mechanisms under OMB Circular A-67. We are starting a survey of water data, water quality data acquisition activities, by Federal, State, and local agencies, and by selected elements of the private sector.

The survey will involve both surface and ground water quality, and will focus on what kinds of information, for what purposes, and at what cost. We hope to finish the initial phases of the survey by the end of this calendar year, and will then decide how to proceed most effectively.

In closing, I again want to express my appreciation for the opportunity to describe our programs , and would be pleased to respond to any questions.

[The prepared statement of Mr. Peck follows:]

TESTIMONY OF DALLAS L. PECK, DIRECTOR, U.S. GEOLOGICAL SURVEY
BEFORE THE SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND
THE ENVIRONMENT, COMMITTEE ON SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES
MARCH 28, 1984

I appreciate the invitation to provide this Subcommittee information on U.S. Geological Survey's (USGS) activities and plans which are relevant to these hearings. My testimony this afternoon addresses one critically important aspect of environmental monitoring--namely, water.

The USGS has the principal responsibility within the Federal Government for appraising the Nation's water resources. This includes hydrologic monitoring. We have no management, regulatory, or developmental responsibilities--our sole product is scientific information.

Today's testimony highlights USGS' water monitoring activities and our responsibility to coordinate water-data activities. The USGS is the largest single source of information on the quantity of the Nation's ground water and surface water. We operate more than 15,000 surface-water and more than 25,000 ground-water monitoring stations. Further, USGS collects about 70 percent of all the stream-flow and river-stage data available in the United States. This fact is important because water-quality problems cannot be solved without water-quantity data--both are needed to address most water issues.

Also, we operate the only two nationally consistent networks which can be used to statistically validate trends in water quality. These are the National Hydrologic Benchmark Network and the National Stream Quality Accounting Network (NASQAN). In addition, we have lead responsibility for operating the national trends network for acid-deposition monitoring.

However, we are not the only organization with major surface-water quality monitoring programs. Considerable water-quality data are collected by other Federal agencies such as the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, and the Department of Agriculture. But probably the largest amount of water-quality data is collected by State and local agencies. Clearly a great deal is being done to gather vital water-quality information, and many of these activities make a positive contribution to effective water-resources management. However, because of several factors, water-quality data obtained by these numerous agencies cannot be readily aggregated and used for time-sequence and other analyses. Differences in such factors as sampling procedures and frequencies of measurement make objective data comparisons almost impossible.

Monitoring ground-water quality is fundamentally different than monitoring surface-water quality. Ground water commonly moves slowly, and pollution of ground water tends to occur in gradually developing pockets near sources of contamination. Thus, a monitoring strategy designed to collect samples from observation wells chosen for areal coverage would fail to detect most contamination problems until extensive damage had been done. The strategy of the USGS is to study areas where point and nonpoint sources of pollution are known to be affecting ground-water quality. The USGS has developed an approach for obtaining national and regional perspectives on ground-water quality, which emphasizes organic substances and trace metals. Based on decades of experience, we believe that the best approach is to appraise individual areas that are representative of larger regions in terms of climate, hydrogeology, and human activities.

The USGS also is responsible for coordinating the water-data acquisition activities of all Federal agencies. Under the authority of Office of Management and Budget (OMB) Circular A-67, the USGS has coordinated these activities since 1964. Our State offices are in regular contact with more than

800 water-resources cooperators at State, regional, and local levels concerning ongoing projects. The Survey's Office of Water Data Coordination (OWDC) works closely with 32 Federal agencies, which are members of the Interagency Advisory Committee on Water Data. The office also works with the Advisory Committee on Water Data for Public Use, which is non-Federal.

An outgrowth of the A-67 program is the National Water Data Exchange (NAWDEX), which is managed by USGS. The NAWDEX program has 250 members representing Federal, State, and local governments, academic institutions, and private water-oriented organizations. NAWDFX currently responds to approximately 100,000 requests for water information each year using major national water-data files. USGS operates the largest and most comprehensive hydrologic data system in the country--it's called WATSTORE. NAWDEX also provides the only public access to STORET, which is the largest water-quality data base in the Nation. STORET is maintained by the Environmental Protection Agency.

In the last few years, numerous organizations have either initiated new water-quality monitoring activities or greatly expanded their previous ones. New coordination efforts are needed to bring these activities into better harmony. To accomplish this, the USGS is using its coordination mechanisms under OMB Circular A-67. We are initiating a survey of water-quality data acquisition activities by Federal, State, and local agencies and by selected elements of the private sector. The survey, which will involve both surface- and ground-water quality, will focus on who collects what kinds of information. . . for what purposes. . . and at what costs. We will evaluate the results of the initial phase of this survey by the end of 1984, and at that time, we will decide how to proceed most effectively. We intend to work closely with the OWDC Federal and non-Federal water-data advisory committees in conducting all phases of this survey, and we will also seek to involve the new National Academy of Sciences' Water Science and Technology Board.

In closing, let me again express my appreciation for the opportunity to describe the USGS' water-monitoring and coordination programs and plans.

Mr. SCHEUER. Very good. Thank you very much.

Congressman—perfect timing. [Laughter.]

Mr. PECK. Saved by the bell.

Mr. SCHEUER. Right on the button.

Congressman George Brown of California.

Mr. BROWN. Dr. Peck, just to take up some of your responsibilities for a moment. You mentioned that the largest amount of water quality data is collected by State and local agencies.

Is there any central data bank or other way in which that information can be coordinated and standardized, and is it readily available for policy purposes to policymakers that might need that kind of information on a central basis?

Mr. PECK. I think the answer is sort of partially yes, partially no.

We—under this—under our coordinating responsibilities, we run something called NAWDEX, which is an index to water data. So through NAWDEX you can find out who holds data.

We also provide public access to EPA's STORET body of data on water quality. And we have our own water data system, so-called WATSTORE. But I—but I don't think there is—indeed, there is not sufficient standards on water quality or direct access to the data that is held by particularly the local and State agencies.

Mr. BROWN. For example, just to pursue this for a moment, we have a developing problem with regard to what's going to happen to agriculture in the high plains as a result of the depletion of the Ogailala.

If we should want to ask you, for example, what are the trends with regard to drawdown in the Ogailala and the trends in the water quality in that aquifer, what kinds of information could you give us that would help us to determine what the future for irrigated agriculture in the high plains is going to be?

Mr. PECK. We—I think we can respond rather fully on this. We have been carrying out a study for some years under a program called the Regional Aquifer Systems Analysis, a RASA study. And one of the first studies we started was on the high plains aquifer where we have looked particularly at water quality—no, water quantity, ground water quantity, in the aquifer all the way from Montana south into Texas. And we have built a mathematical model that incorporates the past history of depletion of that aquifer, and we looked at water use and can predict future trends.

Now, I don't think there's a water quality component of that program, although we have probably some data from wells relevant to that.

Mr. BROWN. Quality—water quality data from wells?

Mr. PECK. Yes.

Mr. BROWN. Collected by State or local agencies?

Mr. PECK. Yes, and by ourselves as part of our—our ongoing responsibilities to monitor ground and surface water, and quality.

Mr. BROWN. Your testimony is that you would have an index as to what that information was, where it was located, but you do not have a central repository or a—a what you might call a means for validating data as to its completeness or accuracy, or anything like that?

Mr. PECK. Well, that's right. We have a central repository of our own data that we have collected over almost a hundred years, and we can validate the quality on that, but that's just our own data.

Now, perhaps—I am a volcanologist by——

Mr. BROWN. I——

Mr. PECK [continuing]. Trade.

Mr. BROWN. I understand. [Laughter.]

Mr. PECK. And I'm talking—I'm a little out of my depth.

Perhaps our Chief Hydrologist, Phil Cohen, would like to correct me or amplify my remarks or——

Mr. BROWN. Now, we have recently, last year, had a situation arise where we found, lamentably, after many years, that there was serious ground water problems resulting from the infiltration of EDB and into the ground water. It was found accidentally; there was apparently no monitoring for EDB. We found it in California, we found it in Florida.

Don't we have a system which would pick up that sort of thing and make it available in some reasonable time frame?

Mr. PECK. This one I think I will hand to Mr. Cohen. Phil.

Mr. COHEN. Mr. Brown, we are conducting a wide range of water quality and water quantity studies throughout the United States, but they do not cover every system in the country. So, yes, the system could well miss EDB.

Mr. BROWN. As well as many other things, probably.

Mr. SCHEUER. Dioxin? Dioxin? Is—dioxin contaminated sites are built up all over the country.

Mr. COHEN. There is no uniform national system looking for these organics. We take them up in investigation after investigation. But if an investigation were not taken at times, for example, one would not know there was dioxin either in the soils.

Mr. BROWN. Mr. Chairman, I would just conclude by saying I wasn't picking on Mr. Peck, I had some other questions for the other——

Mr. SCHEUER. Go ahead.

Mr. BROWN. No, no, that's all right.

I just wanted him to be aware that I started with him but I was going on to the others.

Mr. MCGRATH. I yield my time.

Mr. BROWN. That's all right. [Laughter.]

Mr. SCHEUER. You are seeing a very unusual example of collegiality here. [Laughter.]

Mrs. SCHNEIDER. I'd even yield my time. [Laughter.]

Mr. SCHEUER. Go on, George.

Mr. BROWN. Well, let's look at NOAA, for example, Dr. Robertson, you have testified at some length here—let's take a problem that is within the purview of NOAA, the deterioration of the Chesapeake estuary.

Is it conceivable that that's been going downhill for 50 years and you didn't know anything about it?

Dr. ROBERTSON. Yes, sir; I think it is quite conceivable that is it. There is really not much monitoring in a routine fashion going on around our coasts, and the Chesapeake is an example of that. Of course, EPA has conducted a rather extensive study on that recently, and showed us the situation.

Mr. BROWN. We are aware of the recent interest in that, but the problem that we are trying to address is long-term national problems here and whether these examples might indicate the need for some corrective action. The Chesapeake, in effect, has become a cesspool, and it's not the only example in the country. And we don't want to allow that to continue to happen, and we are looking for ways in which we might become systematically aware of trends that would bear on that sort of thing.

Are you in a position to assure me today that—that all of these incipient coordinating and—and improvement mechanisms are going to prevent us from having that sort of thing happen?

Dr. ROBERTSON. I am not in the position to assure you of that, but NOAA has identified this problem; and Dr. Ehler's group, Dr. Ehler being here, the Ocean Assessments Division, is initiating, and has in fact more than initiated, it is underway a—and a program to try to evaluate the status and trends of pollutants in the coastal zone; and I am glad he—I am sure he could give you some further information if you are interested.

Mr. BROWN. I am sure he could.

Let's look at another problem, acid precipitation, which you have been working on now for some time. I forget the number, but tens of thousands of lakes which apparently are threatened for some reason or another. And from everything that I can tell, there is still a division of opinion as to what's happening in—in these lakes. Some say that it's a natural process, and some say it's even a healthy process; others say it's not.

The point we are concerned about is, do we have in place a mechanism for collecting trend data that would indicate to us just what is the status of the natural bodies of water, freshwater? What indicators are there that there is serious reversible, irreversible damage taking place, and that would allow policymakers to act in a timely fashion? Do we have that kind of information for inland waters in the United States?

Dr. ROBERTSON. I think possibly on the acid precipitation, Dr. Hecht, maybe, or Allan Thomas.

Mr. THOMAS. Well, we have a limited network to try to identify on a regional basis for the concern is over——

Mr. PECK. Be my guest.

Mr. THOMAS. Thank you.

We—under the Acid Rain Program there is a network to try to look at acid precipitation on a regional basis, particularly in the Northeast.

Now, there's no attempt to try to look at individual lakes because that's an enormous problem. The other part of it is—and that you referred to—is that we don't understand in a research program the trans—I mean, things like the transport mechanisms, the chemical transformations. And we are trying to look at this in sort of a systematic way doing some monitoring, at the same time we are trying to carry out a research program to nail down the kind of issues that your—that you've brought up.

Mr. BROWN. Well, if you don't understand the transport and freight mechanisms, then you really don't know what to look for yet, do you?

Mr. THOMAS. Well, you know something about the chemicals and I think the problem was brought up by the fact that there have been some number of measurements by various groups within the country that have shown changes, I think over the last 20 years.

Now, there are problems of quality assurance within this, but attention is being paid to that. It is getting sort of, shall we say, a clean measurement—that you know that you are looking at acidic substances.

Mr. BROWN. Your testimony is that you don't have a comprehensive system for monitoring or assessing these labs. Do you have a validated sampling method for doing it, or are you just doing it catch-as-catch-can?

Mr. THOMAS. Well, I guess I'd have to check on that question. I know there's been a lot of work on trying to improve the monitoring program, and to improve the procedures by which you do that. There has been a lot of attention to that.

Mr. BROWN. Understand, I'm not attributing anything evil to you as a result of this. I know that what you can do or can't do frequently is the result of policy or budgetary decisions that you have no control over; and we are just trying to identify the scope of the problem here and whether there might be a solution to it. And, hopefully, this legislation might be a mechanism for helping you do that.

Getting back to NOAA for a moment—a few years back I visited one of the labs where they were looking at fish and marine life of various kinds to measure the impact of pollutants. They, in effect, were biological monitoring systems. I was very impressed with that program, and could you give me, just off the top of your head, an idea whether that's continuing, whether it has increased, or decreased, and how you evaluate the importance of such systems as a part of a national monitoring network?

Dr. ROBERTSON. First of all, I'll explain my bias. I am a biologist, so I think it's important. NOAA in the status and trend program that I just mentioned, will be putting approximately half the effort into trying to monitor the status of fish pathology around the coasts. And so I would say, yes; we've picked up that ball and we are running with it.

Mr. BROWN. Do you have a system that monitors this throughout all of the coasts so that you can pick up what is happening as a result of flow of waters into the ocean, a reasonably comprehensive—or on a reasonably comprehensive basis all around the coasts, or are you still doing it only in two or three places?

Dr. ROBERTSON. It's all around the coast, unless Mr. Ehler corrects me—I believe it's going to be at 40 stations, which is not going to catch the whole thing. It's an expensive proposition; it's one that we still, I think, need to look at, a 40-station network, maybe, before we look at expanding it, to see what results we're getting.

Mr. BROWN. Does that include both east and west coasts and the bay as well?

Dr. ROBERTSON. Yes, it is all around the coast. And Mr. Ehler, as I should have remembered, we are going to be looking at concentrations of contaminants in mussels at 150 stations around the coast. The pathology one is 40 stations.

Mr. BROWN. Mussels are particularly good sensors, are they?

Dr. ROBERTSON. The idea is that they are kind of am in situ collector for us, a bag of organic chemicals that concentrates most of the chemicals as a toxic organic sleeves we are so interested in.

Mr. BROWN. Do you have procedures for analyzing these mussels and collecting that data systematically and maintaining it in some fashion that is usable for other analyses for our policymakers or other scientists?

Dr. ROBERTSON. This is certainly, yes, certainly our intent. We are a rather strong quality assurance program on it——

Mr. BROWN. Distinguish between what you are doing and what your intent is.

Dr. ROBERTSON. This mussel watch program is—has been—conducted in the late seventies by EPA. We have not got ours in place yet. We're out on an RFP to get a contractor to do this work, so that's why I have to put it in the future tense.

Mrs. SCHNEIDER. Would the gentleman yield?

Mr. BROWN. Why don't I——

Mrs. SCHNEIDER. Oh, you have another good one.

Mr. BROWN. Why don't I yield my time and you pick up and then I'll resume.

Mrs. SCHNEIDER. We'll exchange. Sounds good to me.

I just wanted to ask Mr. Hill, if you had mentioned in your testimony that you've begun an analysis of the various Federal environmental monitoring programs? And I wondered how long—how far along you were and if you have any initial conclusions that have been reached?

Mr. HILL. We don't have any conclusions as yet, Mrs. Schneider, but we were interrupted part way through our process of designing a study. As I mentioned earlier, Congress sent a special appropriation to the council to do a study on the need for a national water resources research center and a national water resources information clearinghouse.

Mrs. SCHNEIDER. Yes.

Mr. HILL. And the President signed it December 1; we awarded a contract February 6; so the staff that was supposed to be working on our monitoring survey was diverted to get the request for proposal in place and coordinated with the Federal agencies, not just those that Congress mandated we coordinate with, but there's more than 20 agencies we coordinated the study proposal with.

Mrs. SCHNEIDER. But is that strictly on water resources?

Mr. HILL. Yes.

Mrs. SCHNEIDER. It has nothing to do with air or any——

Mr. HILL. Now this individual is coming back to work on our overall monitoring study, and the study is to develop an inventory of all existing Federal monitoring programs.

Mrs. SCHNEIDER. Do you have a date as to when you hope to complete that study?

Mr. HILL. I'd like to have it finished by the end of the fiscal year.

Mrs. SCHNEIDER. OK.

I commend you in pursuing this effort. It seems to me that the members of this committee have had enormous frustrations in talking to the individual agencies over a period of years, and recognizing that there's monitoring on all over the place; but if we were to

ask any one of you how much money are we spending on the monitoring ocean pollution, I don't think that we could get a straight answer.

Do you think we could? Dr. Robertson?

Dr. ROBERTSON. We do have a figure on pollution in our plan here.

Mrs. SCHNEIDER. But that's NOAA.

Dr. ROBERTSON. No, that's Federal.

Mrs. SCHNEIDER. That's all. Fantastic, you surprise me——

Mr. HILL. Progress——

Mrs. SCHNEIDER [continuing]. I'm excited.

Mr. HILL. Progress is being made.

Mrs. SCHNEIDER. OK.

I also wanted to know what EPA is doing with respect to international monitoring programs. Where do we sit right now on the international scene?

Dr. RUSSELL. Well, we're looking at the whole domestic international monitoring program from the point of view of what are the problems rather than from just international, per se.

Mrs. SCHNEIDER. You mean to say we haven't identified the problems as yet?

Dr. RUSSELL. No, I was—what I was intending to say, or what I'd hoped that you would hear, was that we were not looking at it in some sort of a global amorphous kind of international versus domestic, but we were looking at it—look at the problems like the problems of acid rain; look at the problems of toxic chemicals; look at the——

Mrs. SCHNEIDER. Yes.

Dr. RUSSELL [continuing]. Problems along the different borders with the United States and say, what are the issues that we need to develop? What are the—what's the information we need to have?

Obviously, we've been cooperating a lot with Canada on the whole acid precipitation program. We are working through the OECD particularly in sharing both statistical protocols and other testing protocols on the toxics problems. And in various ways we're looking at the international monitoring problem.

I think as the—we heard from Dr. Robertson, another one of those international problems is what's going on in the oceans and the estuarian waters; and that is inherently a global problem, if you will, but it's one that could best be attacked not thinking amorphously about international but thinking about what's going on in the oceans, and what can we find out about it. In that sense we're looking at it internationally.

Mrs. SCHNEIDER. In the interest of time, the last question that I would like to ask, I would appreciate it if I could have just a one-word answer, a yes or a no, and we will just run down the line here.

But we are talking about $15 million for a commission for monitoring purposes. Now, I have heard some of you, or your agencies, in the past, indicate either in formal testimony or in the halls, that there is always a need for increased funding for monitoring purposes. Now, if you had a choice, would you not—would you prefer to see those dollars put into monitoring programs or into a commis-

sion that would be in charge of studying those monitoring programs?

So, the question is, Doctor, form it in a form of a yes or no answer: Do you prefer the idea of having that money go into monitoring itself?

Dr. RUSSELL. Yes.

Dr. ROBERTSON. Yes.

Mr. HILL. I'd prefer to see it go into a management plan to achieve a set of stated goals.

Mr. PECK. Yes.

Mrs. SCHNEIDER. OK. Well, Mr. Hill——

[Laughter.]

Mrs. SCHNEIDER [continuing]. Moving right along—it's funny that you should be the one to mention that, because from my own perceptions I have always been of the opinion that CEQ's function was to do just that: to act as a commission, as a clearinghouse, as a——

Mr. HILL. Um-hum.

Mrs. SCHNEIDER [continuing]. Umbrella organization to oversee where research, where monitoring, where different activities are taking place throughout all the different Federal agencies. So, I thank you for your very direct answers, and I guess it's time to move along.

Thank you, Mr. Chairman.

Mr. SCHEUER. Righto.

Mike Andrews of Texas.

Mr. ANDREWS. I have no questions, Mr. Chairman.

Mr. SCHEUER. All right. I am just going to ask one question. Given the track record of lack of coordination of all these monitoring programs and the drumbeat of criticism that's come from all of the environment groups and almost everybody who's looked at it; given the many recommendations by CEQ that have been ignored, the agencies, the National Academy of Sciences, the consumer and environment groups, that haven't been implemented and that have been ignored broadly.

Well, what assurance do we in Congress have that the situation is going to improve, and that there will be better coordination, and better planning, without the kind of congressional intervention we are talking about here today? Any of you.

Dr. Robertson, you were critical of this effort, you said that coordination was going on. We have a helluva lot of people who are telling us that coordination is not going on; and that this whole divergent congeries of State and local programs urgently and desperately needs coordinating.

Dr. ROBERTSON. I don't believe I can give you a guarantee that it's going to improve, but what I was trying to——

Mr. SCHEUER. No guarantee—what logical assurance can you get from what has happened, and what is happening now, that there's going to be any improvement whatever?

Dr. ROBERTSON. My, my——

Mr. SCHEUER. Without the kind of intervention we are talking about.

Dr. ROBERTSON. The idea I was trying to put across was not that we maybe didn't need some help, but that the mechanisms were in place. Let's not create another mechanism; let's try to make the

mechanisms we have in place very possibly under the umbrella of CEQ work. I think they are there. I'm not sure that maybe some congressional intervention to make—assure that they work, mightn't be useful.

Mr. SCHEUER. Well, if there's specific—specific legislative language that you would suggest to make sure that what we have in place works better, what are your suggestions? What would you recommend to make sure that this bill better meets agency needs? How could we make Mr. Hill and the CEQ function more effectively?

Dr. ROBERTSON. I'm not prepared to make those recommendations today, sir; I haven't given it enough thought, but——

Mr. SCHEUER. Well, why don't we hold the record open for a week or 10 days and let you give us your—your thinking. I mean, you know, most of us in Government can't have it both ways; we've got to bite the bullet. If what—if the condition, what exists, what prevails, is not satisfactory, if there is inadequate coordination, then you can't be against any answer that comes up without giving some suggestions of your own.

So I'm charging you; if you oppose what we suggest and—you know, we're not saying we have the perfect answer here. What do you have to suggest in its place? Does anybody else wish to make a comment?

We do have a situation that is crying for better coordination. I mean, you must have heard this litany of complaints ad nauseam; for I've heard it, and I have a million other things to do, a lot of other areas in which I'm involved. Certainly, you, who are pretty much focusing on this field of environmental monitoring, must have heard it—heard a drumbeat, a very pious form of criticism of the lack of coordination.

What do you suggest?

[Dr. Robertson's written response is contained in the appendix.]

Dr. RUSSELL. Mr. Chairman, I'd like to comment on your earlier question, or the first part of the question was: What are we doing to make it different than before? And, I, like you——

Mr. SCHEUER. Make it better.

Dr. RUSSELL [continuing]. Make it better. And I, like you, have heard——

Mr. SCHEUER. There are a lot of ways to make it different.

Dr. RUSSELL [continuing]. Different. [Laughter.]

Hopefully, some of those ones so different are also better.

We've heard the pious words before, and I've been a participant in that criticism of the environment, and I think that some of the things we are doing at EPA now are going to make some difference, and that difference is going to be for the better.

I think we have, certainly, the will; I think we have the level of top level—the interest and the dedication of top level management in EPA to coordinate the work that we are doing, on an intermediate basis within the Agency; we have now a—mechanisms in place within the Agency, both in being and in process within the Agency, to provide the intra agency coordination. And we've got management systems in place that are assuring that the program offices and everybody else are very abundantly clear that monitoring is important. We are going to be expecting performance and we are

going to be monitoring the monitoring performance. And so I think we've already seen some evidences of change in EPA, for the better. And I think you will see those changes in the future as far as our monitoring program is concerned.

As I said earlier, the improved monitoring data is the essence, it's the being of what we are trying to accomplish in terms of managing for environmental results. So we're making every effort, at least, along those lines.

Mr. SCHEUER. In terms of coordinating the various States and local efforts, monitoring efforts, don't you feel that—that a far better job of monitoring those efforts and coordinating those efforts, and achieving some kind of uniformity of data design is highly needed?

Dr. RUSSELL. It certainly is, and we've got——

Mr. SCHEUER. Where is it coming from? If it hasn't come from—if it hasn't evolved from the present organizational structure after all these years, where is it going to come from; and what reason do we have to expect that it will be coming, will be forthcoming, absent some intervention by us?

Dr. RUSSELL. Well, you make——

Mr. SCHEUER. A lot of years have gone by, and a whole drumbeat of criticism has been taking place over the years; and yet, you seem to sit there blandly and say things are getting better.

Dr. RUSSELL. Some have sat there blandly.

Mr. SCHEUER. Pardon?

Dr. RUSSELL. Some have sat there blandly.

We are—for example, in terms of the air program, we are undertaking an effort to—which is part of our whole funding program with the States to assure the monitoring program that takes place in the States is consistent with that of the—of the Federal program, and that the data are consistent and comparable.

Mr. SCHEUER. We just had a rollcall vote go off. I don't know what's wrong with our buzzer system, but when the next bells go off we will adjourn for about 10 or 12 minutes.

All right. George, do you have any last questions?

Mr. BROWN. Let me just make one additional point.

There has been substantial improvements in the technology of monitoring in all media over the last several years, hasn't there? Is there a central focus in which monitoring technology can be, we'll say, evaluated, and standards set so that regardless of whether or not we have a central monitoring program, at least we would be accepting common standards as to what the current or state-of-the-art technology and how to use that technology is?

Mr. HILL. Mr. Chairman—Mr. Brown, I tried to indicate what the earlier report of CEQ had spoken to, and that was a question of quality assurance of data. That's one of the areas where we need improvement. Now, I know, because it—the project was completed in 1982, but it took almost 3 years work to develop common standards for environmental data among the—what is it?—13 OECD nations. Just for those nations to get a consensus, to get these out on the table, so that now we really can compare in whatever the medium is, or whatever the pollutant is, apples and apples, from year to year—a very difficult task.

Mr. BROWN. Well, I know it's a difficult task but I remember hearings on the *chess* study, which some of you are familiar with, which was based on programs that began back in the sixties, and the problem was the same there: there was a lack of quality assurance in the data. And it seems to me that 15 years ought to be long enough to move forward to a point where we have procedures for—well, maybe not internationally, but nationally, at least, for receiving that.

One additional point I would like to make. I don't think anybody on this committee is enamored of the idea that the Federal Government ought to be doing this. For example, in my own area, we find county health departments doing a lot of very good monitoring, water quality and that sort of thing. And there's a feeling they have to do more of it in the—in the absence of adequate national programs.

What—what we would like to see, I think, is a way in which we could get the concerted efforts of State governments, local governments, private industry. For example, utilities sometimes have the best air quality monitoring of any agency that I know. And yet, I know of no coordinated plan for—for utilizing all of that data.

You wouldn't disagree, would you, that the best national scheme would be one that made the fullest possible use of the local, State, and private industry activities that are going on and help to make their work more coherent and applicable to national needs?

Would any of you differ with that?

Mr. HILL. No.

Mr. PECK. No.

Mr. BROWN. Thank you.

Mr. SCHEUER. Well, all right, its been a very interesting panel and you've given us something to digest, and we've given you some thoughts to ponder on. We thank you very, very much.

Mr. HILL. Thank you, Mr. Chairman.

Mr. SCHEUER. We are going to adjourn now to catch this rollcall vote. We will be back in about 12 or 15 minutes. We will suspend for about 12 minutes.

[Recess.]

Mr. SCHEUER. All right, the hearing will come to order.

This is the third—oh, this is the second panel this afternoon. We are very much pressed for time, it's late in the day. You've been very patient.

We are going to stick rather strictly to our 5-minute limitation for speakers, but we will have 15 or 20 minutes left to question this panel, and I hope that at least a couple of my colleagues will be back here. So I suggest that you talk to us very informally; just sit back and chat, giving us the—an overview of your testimony, and please feel free to advert to anything that you've heard here today, either from us or from the other witnesses, and we will keep it informal.

I am also going to ask unanimous consent that the record be held open for questions to be submitted by members to the witnesses in writing. There being no objection, so ordered. [Laughter.]

That's leadership, right?

Ms. HORN. That sure is.

Mr. SCHEUER. OK.

All right. First, we will hear from Joel Horn, executive director of the Committee on the Year 2000.

STATEMENTS OF JOEL HORN, DIRECTOR, THE YEAR 2000 COMMITTEE; WALTER A. LYON, ADJUNCT PROFESSOR OF CIVIL ENGINEERING, DEPARTMENT OF CIVIL ENGINEERING, UNIVERSITY OF PENNSYLVANIA; DR. J. CLARENCE DAVIES, EXECUTIVE VICE PRESIDENT, THE CONSERVATION FOUNDATION; AND RICHARD M. DOWD, PRESIDENT, R.M. DOWD & CO.

Mr. HORN. I would like to thank you, subcommittee, for inviting me to testify this afternoon, and I'll try to be extremely brief so I'm just going to cut through most of my testimony and just get right to the point.

We, at the Year 2000 Committee, have been doing a study with the Council on Environmental Quality and we are studying the use of natural resource and environmental quality information by large U.S. corporations, and in my testimony I have attached a general description of that study.

And this report will be released—or should I say will be submitted, to CEQ in May of this year, therefore, I can't talk too much about the exact findings of that report since it will be made public—at least submitted to CEQ, I'm not sure if they will make it public, quite soon.

In preparing that report, we interviewed over 200 information users; that's 31 of the largest industrial and service corporations in the United States. To give you an idea: Some of those companies were American Express, Bank of America, Boeing, Exxon, General Motors, Standard Oil—California, and many others.

The corporate participants discussed four things. One, the importance of information on natural resources and environmental quality to corporate decisionmaking; where information users go to get this information; what their opinions are of the information they receive; and whether there are any unmet information needs.

We also listed recommendations from the corporate participants as to how is the information available to them could be improved.

Since our report will not be published for another 6 weeks, I won't talk—I don't want to talk exactly or give verbatim from that, but I do feel fairly comfortable representing the views of those corporate participants that we interviewed in relationship to these hearings.

And I think it's fair to say that—what I want to do, I guess the one point I really want to get across is that in these 200 and more interviews. we interviewed many different types of people. The environmental managers that we interviewed gave us, without a doubt, the most emotional responses to their need for information and the lack of information. That—I feel very comfortable in that—and in preparing for this testimony I asked my staff if this is realistic, whether I could really say this. And we just recounted numerous stories and jokes about how when we would go in to talk to the environmental managers, they were so prepared for us, with the long stories of how they just don't have the data they need to be complying with regulations. And——

Mr. SCHEUER. Let's go off the record for a minute.

[Discussion off the record.]

Mr. SCHEUER. OK, going back on the record.

Mr. HORN. OK, going back on the record, I guess there's only one line I really want definitely to go on which is that it seems very clear from our research that improvement and environmental monitoring at the Government level would be very welcome by all the corporations that we interviewed.

And I could end right there. Obviously, I would be———

Mr. SCHEUER. So you would say the business community is behind the general goal that we're after———

Mr. HORN. Absolutely.

Mr. SCHEUER [continuing]. Of improvement and the coordination, and the organization, and the———

Mr. HORN. Absolutely, 100 percent. I mean, we didn't—let me before—let me check with my staff. Would you agree that every person—if it's the only area where we got such an agreement was in environmental monitoring on all the different types of natural resources information that we discussed with the corporations—I think very strong support.

Mr. SCHEUER. Going off the record again.

[Discussion off the record.]

Mr. SCHEUER. Why don't we go back on the record?

Mr. HORN. On.

Mr. SCHEUER. Just say—I'll repeat the question.

On what kind of—on what kind of questions was there some differences of opinion in the corporate sector?

Mr. HORN. OK, the types of questions where we got difference of opinion dealt with other types of information, like whether it's energy information, mineral information, that—agricultural information. And the disagreements we got, we broke information down into both raw data and the analysis of that data since the analysis is also part of the information pool. And we got sharp disagreement on whether, for example, what the responsibility would be to collect certain types of data, both domestic and international; should it be Government responsibility; who should be doing natural resource forecasting, both domestically and globally; should it be the private sector; should Government information be made more timely and released in tape form. Those type of questions got very strong disagreements from different corporations—those type of questions.

But when it came to the need for more and improved environmental quality data, we had no disagreement whatsoever; it was very positive.

[The prepared statement of Mr. Horn follows:]

STATEMENT OF JOEL HORN

DIRECTOR, THE YEAR 2000 COMMITTEE

BEFORE THE SUBCOMMITTEE ON NATURAL RESOURCES,
AGRICULTURAL RESEARCH AND ENVIRONMENT

COMMITTEE ON SCIENCE AND TECHNOLOGY

UNITED STATES HOUSE OF REPRESENTATIVES

MARCH 28, 1984

Good afternoon. My name is Joel Horn. I am the Director of The Year 2000 Committee. The Year 2000 Committee is a group of national leaders organized to examine the ability of the United States to understand the complex interactions between global trends in natural resources, population, and the environment. The Committee is concerned with the effects of these trends on economic and political stability worldwide.

Russell E. Train, President of World Wildlife Fund, and Robert O. Anderson, Chairman of Atlantic Richfield Company, are Co-Chairmen of The Year 2000 Committee. I have attached a description of The Year 2000 Committee with a membership list and submit them as testimony with these remarks.

One purpose of The Year 2000 Committee is to examine possible improvements in the institutions which provide information to public and private decision-makers regarding natural resources, population and the environment. Russell Train and the staff of The Year 2000 Committee are currently studying, under contract with

the Council on Environmental Quality (CEQ), the use of this information by large U.S. corporations. I have attached a general description of the study and a complete list of the corporate participants and submit them as testimony with these remarks. The Russell E. Train Report will be submitted to CEQ in May of this year.

In preparing the Report, the staff of The Year 2000 Committee interviewed over 200 information users at 31 of the largest industrial and services corporations in the United States, such as American Express, Bank of America, Boeing, Exxon, General Motors and Standard Oil Company of California. Corporate participants discussed: (1) the importance of information on natural resources and environmental quality information to corporate decision-making, (2) where information users go to get this information, (3) what their opinions are of the information they receive, and (4) whether there are any unmet information needs. We also elicited recommendations from corporate participants as to how the information available to them could be improved.

Since the Report will not be published for another six weeks, I am not at liberty to disclose the findings and recommendations contained therein. I do feel, however, that I can fairly represent the feelings of corporate decision-makers with respect to the need for environmental quality data as expressed in our interviews, and will attempt to do so as succinctly as possible.

We interviewed environmental managers at six of the corporations visited. Without a doubt, these participants expressed the most emotional and vociferous comments about the status of information available to them. We learned that although environmental managers have many uses for environmental quality information they use it for two primary purposes: (1) to assist in the establishment of appropriate regulatory standards (essentially a lobbying function), and (2) to enable them to comply with the regulations.

With respect to the information available for these purposes, we heard the same two comments over and over again: first that the Congress is enacting legislative standards based upon inadequate data and, second that the baseline data necessary to comply with regulatory standards is not available. These interviews were filled with examples of the lack of environmental quality data at the government level and of attempts made by corporations to collect the data for themselves. Every environmental manager we interviewed identified a clear, urgent need for improved environmental monitoring in order to establish appropriate regulatory standards, and to monitor compliance with these regulations.

As I said before, Russell Train's report discusses these issues and presents recommendations for improvement. I am sorry that I cannot disclose more before the Report is published. It seems clear from our research, however, that improvement in environmental monitoring at the government level would be welcomed by the corporations we interviewed.

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The Year 2000 Committee is a group of national leaders actively examining the ability of the United States to understand the complex interactions between global trends in natural resources, population and the environment. The Committee is concerned with the effects of these trends on economic and political stability worldwide.

The present focus of The Year 2000 Committee is on improving the tools and techniques necessary to produce and use information regarding natural resources, population and the environment. Committee members are committed to the position that mankind possesses the capablity to both minimize the negative aspects of these trends and to discover their inherent opportunities by improving the methods, institutional structures, and information systems needed to understand and respond to them.

Mr. Robert O. Anderson and Mr. Russell E. Train are Co-Chairmen of The Year 2000 Committee. The following is a current list of members:

Robert O. Anderson	Chairman, Atlantic Richfield Company
Robert O. Blake	Senior Fellow, International Institute for Environment and Development
Lester R. Brown	President, Worldwatch Institute
Dorman L. Commons	Chairman of the Board, American President Lines
Walter Cronkite	Correspondent, CBS
Adrian W. DeWind	Chairman, Natural Resources Defense Council
Marian S. Heiskell	Director, New York Times
Hans H. Landsberg	Senior Fellow, Resources for the Future
Robert S. McNamara	Former President, World Bank
George P. Mitchell	Chairman and President, Mitchell Energy & Development Corporation
Roger Revelle	Professor, University of California
Elliot L. Richardson	Attorney, Washington, D.C.
S. Dillon Ripley	Secretary, Smithsonian Institution
Henry B. Schacht	Chairman, Cummins Engine Company
John W. Sewell	President, Overseas Development Council
Russell E. Train	President, World Wildlife Fund-U.S.
Cyrus R. Vance	Attorney, New York City
George Zeidenstein	President, Population Council

** William D. Ruckelshaus was a member of the Committee until his 1983 appointment as Administrator of the Environmental Protection Agency.

GENERAL DESCRIPTION OF THE CEQ STUDY

"The Needs for and Sources of Resources Information in Large U.S.- based Corporations" is a year-long study commissioned by the Council on Environmental Quality. Russell E. Train and the staff of The Year 2000 Committee will conduct the study by interviewing employees at 31 of the largest industrial and services corporations in the United States. This study will assess the statistical service of the Federal government regarding information on natural resources and environmental quality.

In addition to research at corporations, the study staff will hold interviews with representatives of trade associations, consulting firms and other private sector information providers. The study, which will contain statistical and qualitative analytical components, will investigate the following topics:

- the importance of worldwide natural resources and environmental quality information in corporate decision-making;
- what types of resources information is sought by the private sector;
- the role and effectiveness of the Federal government in meeting those corporate information needs;
- the roles of private providers of resources information; and
- the factors which affect the usefulness of resources reports.

The findings and conclusions of the research will be documented in a report to be completed in May, 1984.

The Council on Environmental Quality in the Executive Office of the President, which commissioned the study, will use the study findings in conjunction with ongoing efforts to improve the government's information system. The Cabinet Council on Natural Resources and Environment will receive a full presentation on the study findings.

ORGANIZATIONS PARTICIPATING IN THE CEQ STUDY

CORPORATIONS

AMAX
American Express
Anaconda Minerals
Atlantic Richfield
Armco
Bank of America
Boeing
Cargill
Cononco
DuPont
Exxon
Firemen's Fund
Ford
Frito-Lay
General Motors
Hewlett-Packard
Kroger
Mead
3M
Monsanto
Occidental Petroleum
PepsiCo
Phibro-Salomon
Reynolds Metals
Shearson/American Express
Southern California Edison
Standard Oil of California
Tenneco
Union Carbide
U.S. Steel
Weyerhaeuser

TRADE ASSOCIATIONS

American Iron & Steel Institute
American Paper Institute
American Petroleum Institute
Chemical Manufacturers Association
Edison Electric Institute
Motor Vehicles Manufacturers

PRIVATE INFORMATION COMPANIES

Chase Econometrics
Conrad Leslie
Data Resources, Inc.
DIALOG
I. P. Sharp Associates
McGraw-Hill, Inc.
Mead Data Central
National Planning Data Corporations

Mr. SCHEUER. Very interesting.

I thank you very, very much, that was most interesting.

All right. Now we will hear from an old friend, Mr. Walter Lyon, private consultant and adjunct professor of environmental science at the University of Pennsylvania.

Mr. LYON. Thank you, Mr. Chairman. I will read pieces of my testimony. As my colleague Mr. Horn said, this is an emotional subject. I find it easier to take from my written statement.

Mr. SCHEUER. Excuse me. Would you pull the mike over so——

Mr. LYON. Yeah.

Mr. SCHEUER [continuing]. We can hear you a little better? Pull it real close.

Mr. LYON. In my previous testimony, I touched on the history of environmental monitoring, the results of the present efforts of the Federal role, and answered searching questions in connection with that hearing.

Successful environmental monitoring effort will tell us much better than we know now whether we are on the right track in cleaning up pollution and in preventing pollution. It will help us set up priorities so we can get us the best pollution abatement for the least amount of money. It will help us anticipate and prevent pollution; and that in the end is going to be less costly than dealing with the problem in any other way. Without a better ability to anticipate problems we are flying blind, constantly; colliding with mountains, collisions which could have been prevented with a good radar system.

As a matter of fact, after this morning I get the feeling that we have not only the absence of a good radar system but we have about six different pilots and five rudders on the system.

A good national monitoring program would have told us about acid rain several decades ago, and allowed us to deal with the problem at a much lower cost. It would have told us much sooner and possibly helped to prevent excessive nutrients in Lake Erie and Lake Ontario, and PCB's in the Hudson, and kepone in the James, and toxics in the Niagara, and BOD in the Chesapeake, and pesticides and hydrocarbons and heavy metals in our water, and our air, and our bodies, long before we discovered them.

Good monitoring would have painted a more meaningful picture of environmental ded—degradation, more meaningful in the sense that Congress could have used the information to set national priorities and ways that would have allowed for more progress with far fewer Federal, State, local and private dollars. We pay dearly every day for the lack of such progress. Our environmental expenditures as a Nation are astronomical.

In 1980, the CEQ estimated that the Nation's expenditures and pollution abatement for the decade 1979 to 1980—80—1988, was $735 billion. With that kind of expenditure, we need a more powerful planning tool and more reliable measure of progress.

We need not spend more money for monitoring, in my opinion. The present investment in a highly fragmented, highly ineffective system, can be used to pay for one that works and serves our national purpose.

We have been told this repeatedly by a plethora of national commissions who observed the disorderly—and I would add, this most

monitoring scene—and urged an improvement, but were, unfortunately, not specific about how it was to be attained.

Mr. SCHEUER. Can I ask you, what was that decade? Was it 1969 to 1978, or was it——

Mr. LYON. The decade about the money, related to the money? That was 1979-88.

Mr. SCHEUER. We haven't reached that yet?

Mr. LYON. No. The CEQ estimate——

Mr. SCHEUER. Oh, the estimate of what——

Mr. LYON [continuing]. Of what it would cost.

Mr. SCHEUER. We've got the first half of the decade?

Mr. LYON. Yes, yes; it was——

Mr. SCHEUER. I getcha.

Mr. LYON. Looking ahead what it would cost.

Mr. SCHEUER. OK.

Mr. LYON. And we've been pretty well—we've pretty well stayed on that track.

Your bill corrects a serious deficiency in a number of ways: It creates a well-balanced commission with a solid, comprehensive mission, and an adequate amount of time to do the job. It assigns the commission the task of specifically proposing an improved program—that's something these other commissions were never asked to do. And it links that program to the growing importance of global monitoring, too.

Mr. SCHEUER. Of global monitoring?

Mr. LYON. Global monitoring. As a matter of fact, I was amused by the fact that the witness from EPA this morning said that OECD, after a long time, had gotten together on data quality control within the OECD countries. I think it would be happy—a happy incident if we did the same thing within EPA alone; and it has not happened.

Very briefly, since my time appears to be up, I see two problems with the bill. One is excessive reporting and confusing of reporting requirements. The bill requires——

Mr. SCHEUER. Confusing reporting requirements?

Mr. LYON. Yes, yes.

The bill requires the commission to prepare its own report and concurrently during its 3-year life requires the Administrator of EPA to annually issue his own report while the commission is at work. The commission is required to help the Administrator with his reports and the Administrator's expected to help the CEQ, who, in turn, is supposed to help the President with his report.

So, in summary, during the 3-year life of the commission, you are going to get seven Federal reports on monitoring and, frankly, I—I think that—we don't need that.

And the other comment I have is that the commission really needs complete independence. Anybody who is for truly unified national monitoring in this government is like a mongrel at a dog show of the American Kennel Club. I hate to use that kind of analogy, but the point is there—there's some big turf problems involved in this. And for that reason I would urge that the bill be amended so that the chairman would be a non-Federal person, someone from among the members that are not—that are not in the Federal Government.

I think—I would just summarize by saying, Mr. Chairman, we thank—I thank you for really paying attention to this very important subject. And I know it's not one that gets you a lot of publicity but I hope you and your committee will hang in there. It's a terribly important subject.

[The prepared statement of Mr. Lyon follows:]

Statement of Walter A. Lyon
Adjunct Professor of Civil Engineering
Department of Civil Engineering
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and

Engineering Consultant
20 Clifton Road
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Before the SubCommittee on Natural Resources
Agriculture Research and Environment
House Committee on Science ans Technology

March 28, 1984

Mr Chairman, I appreciate the opportunity to appear before you and members of this Subcomittee to discuss proposed legislation on Enviromental Monitoring.

In my previous testimony I touched on the history of environmental monitoring, the results of our present efforts, the federal role and I answered a number of searching questions which you had raised in connection with that Hearing.

I am delighted that the work of your Committee has now resulted in a very substantial piece of legislation which deserves the full support of anyone who has deep concern about the environment whether ardent conservationist or industrial manager.

A successful National Environmental Monitoring Program will tell us much better than we now know, whether or not we are on the right track in cleaning up pollution or in preventing pollution. It will help us set our priorities right and get us the best pollution abatement for the least amount of money. It will help us anticipate and prevent pollution and that in the end is the least costly way of dealing with any problem. Without a better ability to anticipate problems we are flying blind constantly colliding with mountains which could have been prevented with a good radar system.

A good National monitoring program would have told us about Acid Rain several decades ago and allowed us to deal with the problem at a much lower cost. It would have told us much sooner and possbibly helped to prevent excessive nutrients in Lake Erie, PCB's in the Hudson, Kepones in the James, toxics in the Niagara and pesticides, hydrocarbons and heavy metals in our water, our air and our bodies long before we 'discovered' them.

Good monitoring would have painted a more meaningful picture of environmental degradation, more meaningful in the sense that Congress could have used the information to set national priorities in ways that would have allowed for more progress with far fewer federal, state, local and private dollars. We pay dearly every day for the lack of such a program. Our environmental expenditures as a Nation are astronomical. In 1980 the CEQ estimated the Nation's expenditures in pollution abatement for the 1979-1988 decade to be 735 Billion Dollars. With that kind of expenditure we need a more powerful planning tool and a more reliable measure of progress.

We need not spend more money for monitoring. The present investment in a highly fragmented ineffective system can be used to pay for one that works and serves our national purpose. We have been told this repeatedly by a plethora of National Commissions who observed the disorderly monitoring scene and urged an improvemnt but were unfortunately not specific about how it was to be attained.

Your Bill corrects this serious deficiency in a number of ways. It creates a well-balanced Commission, with a solid and

comprehensive mission and an adequate amount of time to do the job.

It assigns the Commission the task of specifically proposing an improved program and it links that program to the growing importance of Global monitoring.

I see two problems with the bill.

1) Excessive reporting and confusing reporting requirements and

2) the lack of complete independence

1) TOO MANY REPORTS

The Bill requires the Commission to prepare its own Report and concurently, during its three-year life, require the Administrator of the EPA to annually issue his own report while the Commission is at work. The Commission is required to help the Administrator with his reports and the Administrator is expected to help the CEQ who, in turn, is supposed to help the President with his annual Report on the Environment.

So during the three year life of the Commission SEVEN federal reports covering the same subject will be issued.

The Administrator's report would, in part, duplicate the work of the Commission, and would tie up EPA staff who instead of writing reports could be helping the Commission with its work.

When I read the assigment given to the EPA Administrator, I find it an impossible task to accomplish in one year. At best we would get a partial report.

In summary, we do not need all these reports. They would cause a great deal of confusion and would tend to divert energy and jeopardize the independence of the Commission.

2) THE COMMISSION NEEDS COMPLETE INDEPENDENCE

The Commission needs a great deal of independence if it is to be successful. Many federal agencies have monitoring responsibilities and the important ones are represented on the Commission. That's as it should be, but monitoring programs represent governmental turf and only a truly independent Commision can deal with that. For that reason I further suggest that Section 4 (2)(b) be changed to provide for the election of the Chairperson from among the non-federal members of the Commission. For the same reason I would also recommend that the funds under 6 (b) of the bill be made available to the Commission for its reporting responsibilities.

Implementation funding, if needed, should arise out of the report of the Commission and should not be considered prematurely, at this time. To tie implementation funds to a specific agency before the

Commission has reported would be confusing and jeopardize its independence.

Section 2 (1) contains the definition of environmental monitoring which is crucial to the success of the effort and needs to give the Commission adequate scope to deal with the full scope of the problem. The National Academy of Sciences in its report includes three basic forms of monitoring: source, ambient and effects monitoring. The definition in the Bill, if read too narrowly, might limit the Commission to ambient monitoring which would cripple its efforts. I recommend that the definition be broadened to include all forms of environmental monitoring as follows:

> "Environmental monitoring is the systematic measurement of characteristics of the environment, including ambient conditions, emissions, location, use and movement of existing and potential pollutants, and measurement of the effects on humans, property and natural systems, and including data managment, data quality control, analysis and dissemnation."

My last comment relates to a key word in Section 5 (a)(1), relating to the Report of the Commission. The word "supporting" in line 25 can be read in two ways;to support EXISTING decisions or to provide data to help shape future decisions. While, clearly, the latter was intended;it would help to provide new language such as "information to guide future national and international environmental policy decisions."

I consider the first two comments regarding excessive reporting requirements and independence of the Commission to be of major importance and crucial to the success of the Commission. The other two comments are of lesser importance.

I want to thank you, Mr Chairman and the members of your Committee for the opportunity to appear before you and for your diligent efforts in an environmental endeavor which does not bring you much glory or public attention. I don't know why this is so. All I can tell you is, that, for one who has worked as an administrator of environmental programs for over 35 years at the local, state, federal and international level I can think of nothing more important to our ability to enhance the livability of our common spaceship "EARTH". The environment is complex and therefore our laws and programs deal with pieces of the problem - pieces which belie its unity. To measure progress or anticipate problems require a unified picture. This Bill is the first and most important step in that direction.

Please do not become discouraged or dissuaded from this, your most important mission.

Mr. SCHEUER. Thank you very, very much, Mr. Lyon.

Now we will go to Dr. Terry Davies, executive vice president of the—of the Conservation Foundation.

Dr. DAVIES. Thank you, Mr. Chairman.

Mr. SCHEUER. Son of J. Clarence Davies, an old and valued friend.

Dr. DAVIES. I concur with the previous comments that have been made by both—well, certainly with Mr. Lyon's comments—I think they are very well taken.

Let me—my written testimony gives a number of detailed suggestions for both the environmental report and for the commission. Let me quickly summarize my general feelings about those two major elements of the bill.

I think the environmental report can be very valuable if it provides us an inventory of the monitoring that is now going on. We don't have that basic information that we need to coordinate the ongoing system, and if that report can do that, that would be a tremendous contribution.

I think as drafted in the bill it does a bunch of other things as well, and I—frankly, those, to me, are more confusing, and I think Mr. Lyon was making the same point. I don't think that report, for example, should contain actual monitoring data. That's really the function of the CEQ report and you've got a bunch of other Government reports from USGS, and from EPA, and so on, which do the same thing. To add another one on there, I think would be counterproductive.

So I think—I think the report requirements as called for in the bill needs some refinement and need focus on an inventory, but that in itself would be a great contribution.

The commission similarly, I think—the charge given to the commission needs some refinement and some focusing but is basically useful and constructive. I listened with interest to the administration witnesses and their general negative attitude as toward the commission. There is some—I sympathize with some of the points made by them, and particularly I guess what concerns me is that the time lapse that would occur if the commission were created. We are talking about probably at least 1 year before a commission bill would be passed and the commission would get underway, we are then talking 3 years from there, and we are talking at least another year or two before anything concrete happens; so that brings us up to somewhere around 1989, 1990, I guess, before we expect to see any concrete changes in the way that monitoring is now done.

To me that's a very long time to wait, and there's certainly some areas where I don't think we want to wait that long. So one advantage of sort of going the route that Milt Russell and Alan Hill, and so on, urged on you, one of the advantages is that you could presumably get some changes made faster.

On the other hand, that's not—those two courses of action are not mutually exclusive. I think you're right to question in effect, given the long and sad history of the past, why should we believe that anything different is going to happen now. Particularly, I would say with respect to CEQ. When Mr. Hill says that he is going to coordinate all of the Government monitoring with the

staff, which I believe number somewhere around four or five professionals, and no leverage whatsoever within the Government, I think one could question that kind of statement.

On the other hand, Dr. Russell probably understands the question better than anybody who's been in that position in EPA in a long time. He has been a critic of monitoring for a long time and in a very profound and observant way. So the question there is how long is he going to be around, and how much can get accomplished for the time that he is around with EPA.

It's a tough choice. As I say, I think that the answer may be that the routes are not mutually exclusive, and that this committee really has an obligation to hold the administration's feet to the fire to make changes now, while at the same time taking a broader overview and a grander look in making clear that the commission is not an excuse for inaction; that we should not wait to do anything until the commission reports, which is, I think, a concern.

I think Dick Dowd is going to talk about some of the other things that should be done in the nearer term future.

Thank you.

[The prepared statement of Dr. Davies follows:]

TESTIMONY OF

J. CLARENCE DAVIES

EXECUTIVE VICE PRESIDENT

THE CONSERVATION FOUNDATION

BEFORE THE

U.S. HOUSE OF REPRESENTATIVES

COMMITTEE ON SCIENCE AND TECHNOLOGY

SUBCOMITTEE ON NATURAL RESOURCES,

AGRICULTURE RESEARCH AND ENVIRONMENT

MARCH 28, 1984

I appreciate the opportunity to appear before the subcommittee to comment on the proposed "Environmental Monitoring Improvement Act of 1984."

Mr. Scheuer and the subcommittee are to be commended for focusing attention on the vital but often neglected subject of monitoring. Just to have the Congress asking the types of questions that this committee has been posing is, in itself, a contribution to improving environmental policy. If the bill under consideration can lead to the formulation of some answers it will be an extraordinary breakthrough.

The bill would do two major things: it calls for an annual Environmental Monitoring Report to be prepared by EPA and submitted to CEQ; and it establishes a National Commission on Environmental Monitoring. Let me discuss each of these provisions in turn.

My major concern about the proposed Environmental Monitoring Report is that, as described in the bill, it would place a very large burden on an already overburdened agency. As this committee well knows, the current strain on existing EPA dollars and manpower is hard to exaggerate. The agency cannot adequately fulfill its current commitments with its present resources. Therefore, one should be very reluctant to place new demands on EPA.

Fortunately, I think there are ways to modify the bill's provisions concerning the report which will both improve the report's effectiveness and lessen the burden placed on EPA.

First, it seems unnecessary for the agency to compile all of the information called for in section 3 of the bill every year. A report every two years, or, alternatively, a report every five years with annual updates in between, would adequately serve the intended purposes of the report. The only information which is likely to change each year is the amount of dollars appropriated for each monitoring program, information which the bill does not require to be submitted but probably should.

Second, I would narrow the coverage of the report to exclude monitoring of environmental quality effects (section 3(a)(1), lines 7-9). This is a completely different kind of monitoring, and it would be very difficult to define what programs should be included in the report. For example, most of the data collected by the National Center for Health Statistics and by the National Toxicology Program presumably would be included, but these are very large programs that publish extensive annual reports of

their own. Would all programs for testing chemicals be included? Each state program on vital statistics, including death certificates? Every epidemiological study?

Third, I would delete the requirement that the report contain actual environmental quality data (section 3(a)(3)). This is the purpose of the CEQ report, and inclusion of such data in the EPA report would be both duplicative and confsuing. So far as I am aware, CEQ has not had any difficulty obtaining data from EPA.

If these changes were made I believe the report would serve two very useful purposes: compiling and updating an inventory of environmental quality monitoring programs and reporting on the status of the recommendations made by the National Commission. It would serve these purposes without placing an excessive burden on EPA.

* * *

The establishment of the proposed National Commission on Environmental Monitoring would, in one sense, be an admission of failure. If the Congress, or this committe, or EPA really knew what steps to take to establish an adequate and effective national environmental monitoring system there would be no need to establish a commission. This committee has heard a number of recommendations for improving monitoring, but unfortunately I think that Mr. Scheuer is probably correct in concluding that a more coherent set of recommendations with greater visibility is necessary if significant progress is to be made. Hopefully the proposed commission will provide this coherence and visibility.

There are a number of detailed changes that I think would improve the commission's chances of success:

o Although it makes sense for the commission to provide some advice to EPA on the first Environmental Monitoring Report, I think this should not be a major function of the commission nor should it be a drain on the commission's resources. Therefore, I would delete the term "and assistance" in sections 3(b) and 4(a)(2).

o In section 4(b), line 12, it calls for nominees "representing" a variety of interests. This raises an issue which has been a matter of controversy for this committee before. My own feeling is that the individuals from these sectors should serve on the commission in their individual capacity as experts, rather than as official representatives of particular interests. Changing "representing" to "including individuals from" would take care of the problem. There is still an implication that there are no scientific experts in government, industry, or environmental groups.

o For the reasons discussed above in relation to the Environmental Monitoring Report, I would delete "human health effects monitoring" from section 5(a)(2).

o I would add at the end of section 5(a)(3) the sentence "The benefits part of the assessment need not be strictly quantitative." The commission could waste a lot of resources trying to develop meaningless dollar values for some types of benefits.

o Nowhere in the charge to the commission is it explicitly directed to identify gaps in or problems with existing monitoring efforts. Section 5(a)(4) might be an appropriate place to do this.

o Both sections 5(a)(8) and 5(a)(11)(a) direct the commission to assess the adequacy of monitoring data necessary for the Environmental Monitoring Report. Because I do not think that the Environmental Monitoring Report should contain actual data on environmental quality, I would delete these two sections of the commission's charge.

o Finally, in section 6, it is unclear why EPA should be authorized a one-time $1 million appropriation for issuing a report that is to be issued each year.

These proposed changes are mostly details. The basic concept of having a commission composed of both governmental and non-governmental representatives is useful and valid. The time given to the commission seems reasonable. How much the national monitoring effort is actually improved depends, of course, on the quality of the commission's recommendations and the extent to which they are implemented. Mr. Scheuer's bill at least represents a start.

# # #

Mr. SCHEUER. Thank you very, very much, Dr. Davies.

Now Richard Dowd, Dr. Richard Dowd, of the R.M. Dowd & Co.

Dr. DOWD. Thank you, Mr. Chairman.

Let me also quickly summarize my remarks.

I think I share a concern with other members of the panel that the commission, though critically important for focusing congressional attention on monitoring, which often is an orphan program, may have the contrary result if it serves to make the Congress feel they can take a breather on environmental monitoring, not to press forward.

It seems to me that in the dialog that went on here this afternoon between Representative Brown and the agency member on the issue of what was available in terms of toxics, particularly in water, I would rest my case. I think that the Government is ludicrously low in the actual gathering of data, particularly on toxic air, water, and land groundwater pollutants.

It seems to me that the commission is very, very important, particularly for dealing with the plethora of agencies and institutions within the United States that all carry on their own individual monitoring program pretty much independent of everyone else; and it is absolutely critical for that.

And it seems to me that the commission can serve a very useful purpose with some of the alterations that both Terry Davies and Mr. Lyon discussed, which I would agree.

On the other hand, there is a whole series of monitoring programs that ought to be developed, in my view, that are brand-new ones, and which the commission could give the Congress some advice on; but which I hope, in the name of God, we don't delay till the commission can deal with its report because for the same purpose, if we have to delay till 1988, or 1989, or 1990 to get some of this information, we will be making decisions over the next remainder of this decade on section 112 of the Clean Air Act.

We will be making decisions as to whether the aquifers around the country are hazardous or not hazardous for drinking water, and whether they should be protected or not.

We will be deciding whether or not our waterways are satisfactorily protected or not.

For all that, there is very, very little information. So I think that case is rested.

I have tried to suggest to the committee some areas on page 5 of my testimony that I think should be added significantly in terms of toxic monitoring. I've suggested a $50 million a year budget for a very modest program in toxics monitoring that I am suggesting.

I suggest this not because I think I have any special gift and I'm able to see this better than anyone else; I don't think I am. I think if one takes a look at the programs, these are fairly modest efforts based on what the agency has done before in other areas. The Congress has, I think, a responsibility to put the agency's feet to the fire and say we expect you to run a national program in toxics monitoring, it's your job and you shall do it.

It's up to Congress to, I think, appropriate some additional moneys for that. Unfortunately, toxics monitoring is not cheap; it's amongst the most expensive monitoring we have. There are ways

of reducing the net national cost to the U.S. Government through the use of industrial cooperation, as Mr. Horn suggested.

In my discussions with industry and, indeed, in this committee hearing a year ago, the suggestion was made that industrial groups would cooperate with the Government in actually carrying out measurements and being part of a nationwide system. Indeed, several of the members who testified at—in this panels, agreed with that, much in the same way that Mr. Horn was suggesting—they see the importance of monitoring data.

I suggest that something on the order of $20 million a year for toxics air monitoring divvied up, roughly one part to metals and three parts to organics, none of which is essentially being done now—something on the order of $20 million a year for toxic measurements in surface waters, roughly something on the order of $15 million for actual measurements, another $5 million for methods development, and an estimate of $7 to $12 million for groundwater monitoring assuming that you don't have to carry out any additional drilling of holes and that you can use some of the work that USGS has already carried out.

I will stop with that, Mr. Chairman, merely to say that while I think $50 million sounds like a lot of money, the question is: What price do we as a Nation pay if we do not carry out a significant program in monitoring? I would refer to Mr. Lyon's testimony—everyone who has looked at the kinds of cost that control technology requires for the Nation over the next decade, has come up with costs on that order: half a trillion dollars, more or less.

Mr. SCHEUER. Came up with $700 billion.

Dr. DOWD. That's right.

It seems to me a fairly modest national investment in environmental monitoring that can help pinpoint where problems really are and where there are only perceptions, is essential, so that we are able to spend that money in the best way possible.

Thank you very much.

[The prepared statement of Dr. Dowd follows:]

RICHARD M. DOWD, Ph.D.

Testimony on the Environmental Monitoring Improvement Act of 1984

before the

SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND ENVIRONMENT

March 28, 1984

Thank you, Mr. Chairman. My name is Dr. Richard Dowd. I am president of R. M. Dowd & Company, a private environmental and scientific consulting firm. I'm happy to be able to speak before you and the Members of the Subcommittee on the very important issue of monitoring. My remarks today are based on my background and professional experience with issues concerning environmental monitoring. As you know, I formerly served as the Executive Director of the Environmental Protection Agency's Science Advisory Board for EPA, as Principal Science Advisor to the EPA Administrator, and finally as EPA's Acting Assistant Administrator for Research and Development. In those positions I took a very strong interest in environmental monitoring and spent a good bit of my time in the Agency in both evaluating and working with others to improve EPA's monitoring systems.

It is, I think, quite appropriate that this Subcommittee focus attention on monitoring, which is often an orphan program in the environmental field. Generally, each media -- air, water, RCRA -- has its own program for compliance monitoring in its particular bailiwick, but it is quite clear that this single-track approach has left comprehensive monitoring alone, without broad-based support.

The bill now before you, to establish a Commission on both domestic and international monitoring, is -- I believe -- an appropriate place to begin such a comprehensive effort. I think, however, that to be most productive the proposed Commission's activities should be somewhat more narrowly focused, concentrating on the major issues of identifying and defining systematic monitoring plans. Other activities, no matter how worthy in themselves -- for example, efforts in support of the EPA report suggested in this legislation -- could deflect the Commission from its more important work in reviewing and recommending major monitoring plans.

I do feel that there is one major problem with the legislation as presently drafted. Unfortunately, I think the bill alone, without any additional directives to EPA or any funding support, could simply delay the introduction of the necessary programs to develop a comprehensive monitoring program for environmental contaminants. While the Commission's initial task represents an essential aspect of the overall program, without additional funding one may find -- three years or four years hence -- that the situation is exactly the same as at present, save that there is a Commission report to deal with.

Toxics monitoring, in my view, continues to be a major need. The problems noted in the hearings by this Subcommittee last year continue to exist. The need is, if anything, more acute than was a year ago, if for no other reason that nothing

has happened to improve and increase the amount of monitoring data on toxics in air or land or water in these ensuing 12 months.

Let me suggest just two examples of the needs I am referring to. First, in the air toxics area: last fall, Administrator Ruckelshaus appeared before the House and indicated his strong feeling that -- particularly in Section 112 (hazardous air pollutants) -- he saw the need to establish quickly (within the next two years) a decision process for between 20 and 25 potentially toxic air pollutants, to determine whether they are or are not hazardous. In subsequent testimony before the Congress within the last two weeks, the Agency has indicated the two major aspects that will drive this decision-making process: information on health effects of these potentially toxic air pollutants, and information on people's exposure to levels of these toxics in ambient air. The monitoring need in establishing such a program can be simply stated: for the majority of potentially toxic air pollutants, there is simply no information on which to judge exposure -- and so one is forced toward making back-of-the envelope calculations based on modeling, with virtually no monitoring data to support them. The history of the Agency in carrying out such paper exercises has been checkered, at best. Interested parties have successfully challenged such Agency calculations, not because EPA has acted in bad faith, but simply because, in the absence of good validation data, models cannot be corrected and pollutant estimates are likely to be wrong or out of date.

In the area of groundwater, as the Agency struggles to establish a groundwater strategy, it has become abundantly clear that the amount of available information on contaminants in groundwater is ludicrously low. In fact, we know so little about groundwater we can scarcely say with certainty what it is we do not know.

Therefore, I would like to suggest to this subcommittee that, in addition to the Commission that you are proposing, a major commitment to the monitoring of toxic pollutants in air, in water (surface water) and in groundwater needs to be made. I have some estimates which I would like to present today about the costs of such a major effort. Unfortunately, it is not inexpensive. But, as in so many other areas -- the true question is: what are the major costs for not carrying out such an effort? Nearly every environmental program, in one way or another, depends on a review and evaluation of the existence and importance of exposure to potentially toxic pollutants. The Clean Water Act that will shortly come up will essentially require best available treatment (BAT) and a subsequent evaluation of water quality based standards after BAT is applied. Section 112 of the Clean Air Act requires the Agency to be able to evaluate health effects of hazardous air pollutants. And virtually everyone who has reviewed the issue of groundwater contamination understands that, given the close connections between hazardous waste landfills and the large unknowns in groundwater contamination, we can

make very few accurate predictions about the costs or effectiveness of the solutions we are seeking.

TABLE 1

MONITORING NEEDS

	Incremental Cost ($ Millions)*
A. Conventional Pollutants: Air & Water (States and ORD Only) (Restoration of $14.2 m)**	
B. Toxics Monitoring	
• Air-Metals	5.3
• Air-Organics (60-150 Sites)	15 (or 37)
• Water-Monitoring	13
-Device Development***	5
• Groundwater	7 to 12
• Pesticides Rural and Urban Impact	2
• Regional Labs	2.3
	49.6

* in addition to EPA's FY'85 budget

** for direct Agency monitoring programs, plus grants to States for conventional State monitoring programs

*** cost for improving current measuring techniques

I believe, as I show in Table 1 entitled "Monitoring Needs," that EPA could establish a reasonable -- though not extraordinarily extensive -- monitoring system for toxics in the air, in surface waters, and in groundwater for something approaching $50 million a year more than is presently spent. In this table, I have

separated different media programs so that you can see the allocation for each. In air, as you can see, I've distinguished between monitoring for organics and for metals (note that this rough split does not deal with the question of specific metal compounds but rather with metals as a gross total). In regard to air toxics, I've assumed something on the order of 60 fixed sites in the nation. In surface water monitoring, I have assumed that one would use the existing thousand sites and simply measure once a month. (There are, of course, potentially ways of improving the efficiency of that process, but at the moment there is no procedure for doing so; the item labelled "device development" represents the cost for making such an improvement.) In groundwater testing, I've assumed the use, wherever possible, of existing sites for groundwater sampling, with very few -- if any -- new sites added. (To the extent that one must prepare -- i.e., drill -- new sites into aquifers, this price could be much higher.) And I've added some costs for both rural and urban pesticides monitoring. Finally, there is some money for the Agency's regional laboratories.

Fifty million dollars sounds like a lot of money, particularly in light of the losses the Agency has sustained during the past three years and the rebuilding job that has to be done in so many areas. But doing the monitoring <u>right</u> will help in that rebuilding, in that it can enable the Agency to better target its pollution control programs. Also, it is conceivable that

one may be able to reduce the amount of money needed from government sources if one is able to get industrial and other institutional cooperation in the development of monitoring systems. In my testimony before this subcommittee last year, I suggested (and it was corroborated by at least one of the industry participants in those hearings) that industry would be prepared to carry out joint monitoring efforts with government -- providing that this led to both a structure for industrial cooperation and participation (that is, a framework which identifies the methods and the particular contaminants to be measured) and a feedback mechanism with which industry, as a matter of course, would be able to access such joint monitoring information in the Agency's system, routinely. I believe these suggestions are as valid today as they were a year ago, and that today you would also find industry prepared to carry out such a joint enterprise with the government.

In conclusion, I think the subcommittee is to be commmended for preparing legislation to establish a Commission on monitoring. However, I would suggest that it needs to go one step further, that we cannot wait until 1988 or 1989 to begin a comprehensive monitoring program. The subcommittee should give EPA suitable directives and authorize the expenditure of the necessary funds to establish a toxic monitoring network that would give us proper information on which to base sound and reasonable pollution control programs and decisions. Thank you.

Mr. SCHEUER. Well, thank you.

Let me just ask you one question about this plan for—this plan of yours to involve industry and toxic waste pollution, and presumably have a web, a network, of industrial reporters, so to speak, which should certainly be the ideal way to do it—it would cut down expense; would let the people who had presumably doing the polluting, and who know where it is and how to measure it, report back to you.

Does that indicate—I mean, if I were to advocate that system, would my constituents—would they charge me with believing in the tooth fairy, and Santa Claus?

In other words, can we—given the recent history of industry activities in polluting, the adamantine refusal of the Dow Chemical Co. to even permit EPA to monitor the dioxin discharge into the Tittabawassee River, if they were that all-fired determined to prevent the Government from getting that information, can we rely on a corporate polluter—and I don't use that as a term of opprobrium because any—I guess most manufacturing processes produce some pollution so ipso facto that makes corporations polluters.

But can we rely on the producers of the—the corporate producers of the pollution, to report back to us honestly and accurately to the degree to which they are polluting our land, our water, our atmosphere? Is that an utter exercise of self-delusion and——

Dr. DOWD. Mr. Chairman, I think you'd have to make—you have to distinguish between two kinds of measurements that need to take place. The first is the kind of measurements that this committee has been particularly concerned about, and that has to do with the measures of background levels, the ambient exposures to which people broadly come into contact with; and have to do with what the corporations, for example, take in in their intake water, or which is blown by their plant before it gets over their plant.

I think one can change—make a distinction between that kind of measurement and the kind of measurement that deals directly with the material that is put out of pipes or out of smokestacks. That is really compliance monitoring. Do they meet the standards that the Government set up?

It seems to me that if you make that distinction, it's important for the Government to have its hand on effluent and emission monitoring, but the ambient monitoring is one we all have a stake in. It seems to me that it's the ambient monitoring where industrial chemists have a great deal of experience and, indeed, are very good, that one could get some cooperation. Obviously, if you are talking about effluent or emissions, it comes in a whole, different series of——

Mr. SCHEUER. Yeah.

Dr. DOWD [continuing]. Responsibilities, and I think you'd have to distinguish between the two.

Mr. SCHEUER. Yeah. Well, there's obviously a lot of talent out there that we ought to have working for us; it's ridiculous. I have been saying for the last number of years that all that brilliance in the chemical industry was applied to producing new chemicals with varying degrees of lethal effluvia was what got us in this jam in the first place, and we better doggone well take advantage of all

that brilliance and creative talent and getting ourselves, and working ourselves out of this bind.

I don't know how we can hope to get—get out of the bind that we are in without harnessing the talent in corporate America.

Dr. DOWD. Well, one of the things is that—it seems to me that——

Mr. SCHEUER. The question is how do we work out the institutional framework to do it?

Dr. DOWD. You give someone the responsibility to do it, and nobody has that responsibility now.

Mr. SCHEUER. Yeah. Well——

Dr. DOWD. It seems to me that if you tell EPA or if you choose another agency—but if you tell EPA you must set up a national system, and we direct you to include in your framework industrial reporting—and you, EPA, will allow them not only to put data into the system, but to be allowed, as a matter of course, to take data out of the system again, for ambient monitoring.

At the moment, Representative Brown asked the person from the USGS: Can you put information in and get it out? The answer was very ambiguous, but one could interpret it as no.

Mr. SCHEUER. Yeah. Going off the record.

[Discussion off the record.]

Mr. SCHEUER. Now, Mr. Lyon, you made quite a point of the fact that our reporting requirements are cumbersome. Can you tell us what kind of reporting requirements you would envisage and how they would differ from what we have presented to you?

Mr. LYON. You are talking about the bill——

Mr. SCHEUER. Yes.

Mr. LYON [continuing]. Mr. Chairman?

Yes; I think that the provisions of the bill that call upon EPA and all the other Federal agencies to help the commission with its task, and it's going to be monumental to try to tell them what's going on, what monitoring systems exist, what they cost, where laboratories are located, all those things; I think are quite adequate.

I don't—I really think that to require the Administrator of the EPA at the same time as the commission is trying to do its work, to have him issuing annual reports would be terribly confusing—it would be sort of like a Grecian chorus in the background—and, of course, EPA is one agency, there are lots of others.

Mr. SCHEUER. Can you tell us how we should jiggle it?

Mr. LYON. Yeah, I think that——

Mr. SCHEUER. Or would you rather submit a memo that you can——

Mr. LYON. Yeah, I'd be happy to do that.

Mr. SCHEUER. Why don't you submit us a little memo——

Mr. LYON. Yeah, I'd be glad to.

Mr. SCHEUER [continuing]. As to how you would jigger and tinker with it to get the benefits of the reporting, but to eliminate the overlapping and——

Mr. LYON. Yes.

Mr. SCHEUER [continuing]. Implication that it's a seven-ring circus that you describe; and also to reduce the time frame.

Mr. LYON.

Mr. SCHEUER. There was quite a consensus here—we need that information in the here and now——

Mr. LYON. Yes.

Mr. SCHEUER [continuing]. And not at the end of the decade.

Mr. LYON. Yes; I completely agree with the point.

[The information follows:]

WALTER A. LYON
20 Clifton Road
Camp Hill, Pennsylvania 17011

4/22/84

James H. Scheuer
Chairman;
Subcommittee on Natural Resources,
Agriculture Research and Environment
Committee on Science and Technology
Suite 2321 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Scheuer:

I was very encouraged by the positive tone of your March hearings and hope that a Bill will soon be introduced. During the hearing you asked me about ways to improve the Bill with regard to excessive reporting requirements.

My suggestion would be that instead of having the Administrator reporting **to the Congress and CEQ** on the full scope of environmental monitoring, that he, instead, provide a report **to the Commission** on monitoring within EPA.

In view of the complexity and diversity of environmental monitoring within EPA, this would help the Commission a great deal.

In addition, EPA is in a unique position to help the Commission in its work and might be asked to coordinate federal support to the Commission.

Finally, after the Commission has issued it's report the Administrator of the EPA, and all the other federal agencies who are affected by the report should be be asked to report to Congress on how they intend to implement the recommendations of the Commission.

In addition, the interplay between the Commission and the Administrator with regard to reporting in Section 4 (2) should also be eliminated, as it would set up the confusing and duplicative reporting requirements I referred to in my testimony.

Under my proposal the Administrator would report to and assist the Commission and, after the Commission is done its report would be designed to help with implementation.

One other suggestion, which I did not make during the hearing relates to the developement of a list of potential nominees referred to in Section 4)(b).The nominees chosen by the National Academy of Sciences should, be chosen in consultation with the National

Governors Association and the Council of State Governments. These two organziation could provide valuable assistance to the selection process.

Finally, you asked me what could be done to make sure that the work of the Commission would not defer important monitoring for toxic substances. It might be important to include this concept in Section 2 of the bill where Congress might express it's firm intent that the creation of the Commission should not defer the expansion of Federal, state and local programs designed to monitor for toxic substances.

Much to the contrary, Congress should urge all levels of government to proceed with all deliberate speed in connection with monitoring of toxics and with the of control of environmental pollution by toxics.

I would be happy to draft appropriate language to cover these points.

I enclose a letter I recently wrote to the Wall Street Journal which probably will not be published.

Sincerely yours,

Walter A. Lyon

WALTER A. LYON

20 Clifton Road
Camp Hill, Pennsylvania 17011

4/10/84

The Editor
The Wall Street Journal

Your April 6 story about Bill Ruckelshaus unfortunately perpetuates the personality-cult aura which has surrounded the management of EPA. As one who has worked as a environmental administrator in government for over thirty years I am dismayed at this turn of events. We ought to be concerned less about personalities and more about therate of clean-up of our environment. Another phony issue has to do with what is now called "BEAN COUNTING" - counting the number of cases which the administrator has referred for enforcement to the Department of Justice. Enforcement is an important tool in the environmental management kit, but there is little evidence that it is the most important tool, or that environmental progress can be measured by counting enforcement 'beans'.

The sad story is, that in spite of all the energy and money that have gone into environmental programs, the Nation does not have an environmental monitoring system that will tell us: whether or not we are making progress or loosing ground,x whether we are making sound decisions about the environment and what pollution problems to anticipate so that we will not constantly be surprised by Love Canal's, PCB's and the like.

For twenty years presidential advisory boards have told us this but, we have not responded. Congressman Scheuer's Sub-Committee recently held hearings on his bill to establish a National Environmental Monitoring System and witnesses from every side of the environmental issue agreed to the urgency of improving our capability of measuring environmental clean-up.

Let's evaluate EPA by monitoring the environment and not by the personality of its leaders or by counting beans.

Sincerely,

Walter A. Lyon

(717) 761-5518

Mr. SCHEUER. Do you want to add something about this?

Dr. DAVIES. Yeah, if I could just make a quick comment because I had the same concern about reporting, and I think it can be simplified, and I tried in my testimony to suggest some ways.

Mr. SCHEUER. Maybe you could submit something in writing, too.

Dr. DAVIES. Well, OK, I think it's in my testimony———

Mr. SCHEUER. OK.

Dr. DAVIES [continuing]. For the most part.

[The information follows:]

The Conservation Foundation
1717 Massachusetts Avenue, N.W., Washington, D.C. 20036
Telephone (202)797-4300 Cable CONSERVIT

April 12, 1984

Dr. Davies submitted the following:

As I stated in my testimony, the reporting provisions in the bill can be simplified by making the following changes with respect to the proposed Environmental Monitoring Report:

First, it seems unnecessary for EPA to compile all of the information called for in section 3 of the bill every year. A report every two years, or, alternatively, a report every five years with annual updates in between, would adequately serve the intended purposes of the report. The only information which is likely to change each year is the amount of dollars appropriated for each monitoring program, information which the bill does not require to be submitted but probably should.

Second, I would narrow the coverage of the report to exclude monitoring of environmental quality effects (section 3(a)(1), lines 7-9). This is a completely different kind of monitoring, and it would be very difficult to define what programs should be included in the report. For example, most of the data collected by the National Center for Health Statistics and by the National Toxicology Program presumably would be included, but these are very large programs that

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publish extensive annual reports of their own. Would all programs for testing chemicals be included? Each state program on vital statistics, including death certificates? Every epidemiological study?

Third, I would delete the requirement that the report contain actual environmental quality data (section 3(a)(3)). This is the purpose of the CEQ report, and inclusion of such data in the EPA report would be both duplicative and confusing. So far as I am aware, CEQ has not had any difficulty obtaining data from EPA.

If these changes were made I believe the report would serve two very useful purposes: compiling and updating an inventory of environmental quality monitoring programs and reporting on the status of the recommendations made by the National Commission. It would serve these purposes without placing an excessive burden on EPA.

Dr. DAVIES. But the point I wanted to make was that the one thing which would be in that report which would be invaluable to the commission, it seems to me, is an inventory of what monitoring is going on now, and that's not available anywhere, and that would be included in the report. So I just—I wanted to make that point because I think there's one element——

Mr. SCHEUER. Yeah.

Dr. DAVIES [continuing]. Of that reporting that's essential to the commission's work.

Mr. SCHEUER. All right; does anybody have anything to add?

Mr. LYON. Well, I would comment on your question, Congressman, regarding can we rely on industry to give us data.

I completely agree that industry could give you very good and useful data; that some kind of protocol would have to be established. You ask a question that sounds a little political in the sense that "what would your constituents say" that people in this country who believe that you can't trust any industry. I don't think that's true at all. I think——

Mr. SCHEUER. I don't either.

Mr. LYON [continuing]. I think industries are like people, there are good ones and there are bad ones.

Mr. SCHEUER. I think, for example, just to diverge a little bit, in the health field: To keep doctors off of the special advisory panels of the Food and Drug Administration, who happen to be the experts in a particular new and innovative breakthrough drug, just because they happen to work for the firm that produced it. And to deny the public the benefit of their judgment and their perceptions, and their vast experience, on the underlying assumption that they're scoundrels; and that they are going to press Government to approve something that's going to be harmful to people, because they made a living, perhaps, working for the pharmaceutical company that developed a particular drug; I think is an outrageous reflection on the medical profession.

There may be a couple of those characters around, and there's always an apple or two that can spoil—a barrel, and I suppose sometimes does. And the same thing in this case.

But I believe that the overwhelming percentage of the top industry leaders in the chemical profession, just as in the drug profession, and their chemists, like the pharmacologists in the drug profession, are honest and God-fearing Americans, and want to do right by their country. And it's the exception that—the very occasional exception, that makes things difficult for us.

I suppose you have to set up a system that contemplates the fact that there is an occasional scoundrel about. But it would be an utter shame to throw baby down the sink with the bath water and foreclose the possibility of harnessing all that talent out there to the solution of the problems that this proliferation of new chemicals and new uses has provided for our environment.

I just think we've got to find a way of involving them, and we've got to find some kind of protocol that really depends mostly on self-policing.

Mr. LYON. Absolutely, I——

Mr. SCHEUER. And even the most naive member of 400—535 Members of this Congress; but I just believe Government can't do it

all. There are too many chemicals—my God, there are too many new chemicals, forgetting about the existing inventory—we can't even keep up with the production of new chemicals, and what their possible polluting effects are, much less work back into this inventory of 30,000 or 40,000 or 50,000 toxic waste dumps around the country.

If we can't involve the industry, I would be very depressed and—because the situation is hopeless.

Mr. LYON. That's right.

Mr. SCHEUER. Mr. Horn.

Mr. HORN. I just want to say that here we seem to be talking about whether the government can trust industry, and I think we should also be giving a lot of thought to whether the industry can trust government. And I think that also, when this system that we are talking about of working with the corporations is put together, we should think about how that system is made credible to the corporations, because I think that lack of trust goes both ways.

Mr. SCHEUER. I think you are undoubtedly right.

Well, this has been a fascinating panel and I will make sure that my colleagues read the record, and learn from it, and enjoy it. And I thank you very, very much for your testimony.

Mr. HORN. Thank you.

Mr. SCHEUER. We will now take up our final panel of the afternoon. Mr. William Sylte, chief deputy executive officer of the California Air Resources Board; Mr. Leo Weaver, executive director of the Ohio River Valley Water Sanitation Commission; Mr. Peter Thacher, distinguished fellow of the World Resources Institute; and Mr. Donald R. Lesh, executive director of the Global Tomorrow Coalition.

We are running very late, and I can only apologize for keeping you here so late, and beg your indulgence. You've been very patient, cooperative, to be with us this long. So we'll proceed as we have with each of you speaking for 5 minutes and our little egg timer here will go off at the end of 5 minutes and we will try to expect the message that we get from it; and at the end we'll have 15 or 20 minutes for questions.

So let's start off with—with Mr. Donald R. Lesh, executive director of the Global Tomorrow Coalition.

STATEMENTS OF DONALD R. LESH, EXECUTIVE DIRECTOR, GLOBAL TOMORROW COALITION; PETER S. THACHER, DISTINGUISHED FELLOW, WORLD RESOURCES INSTITUTE; LEO WEAVER, EXECUTIVE DIRECTOR AND CHIEF ENGINEER, OHIO RIVER VALLEY WATER SANITATION COMMISSION; AND WILLIAM W. SYLTE, CHIEF DEPUTY EXECUTIVE OFFICER, CALIFORNIA AIR RESOURCES BOARD

Mr. LESH. Mr. Chairman, thank you very much. I'd like to depart almost totally from my prepared testimony, which you have for the record, and thank you for the willingness to my possibility of appearing before you.

I am speaking today as an individual because to do so for my organization would require the consent of 70 organizations, and we are unable to do that in the time remaining.

Let me just say that I see this in a perhaps simplistic light; namely, that to improve the quality and direction of our environmental monitoring effort is a distinctly important and basic form of improving what we refer to in the Global Tomorrow Coalition as our capacity for national foresight.

In simplest terms, it's to say if we're making decisions today, and every day, as indeed we are, on the shape of our society and life for the next 20, 30, 50 years, let's understand the best we can about what's happening in our environment.

I think that this bill arouses in my mind a feeling about our political system in which we hear so much about checks and balances. In this case I think we have another function which is namely the kick in the pants; we might delicately call it a forcing function. In this case the kick is well merited; too much time has gone on piddling around in our executive branch, deciding about the shape and direction of our environmental monitoring. This commission can perform a highly useful function in clarifying that role.

I would strongly subscribe to the technical criticisms made by Clarence Davies of the Conservation Foundation in his written testimony which I think are very useful on the bill, and particularly to those of Dr. Lyon in the last panel, about the plethora of reporting.

I'd like to see, if anything, this commission be forced to work faster, more efficiently, and at less cost. I subscribe to the view that there has been too much time, and too much gone by, and too much money spent, that we can do this in a better way.

Finally, I want to address very quickly the international aspect of this bill—I understand your subcommittee will address this in more detail later—that is that the United States has an absolutely exceptional role in its capacity to lead other countries of the world in the positive direction in the environmental monitoring.

It's hard to understand—I draw only on my case and 10 years experience in the U.S. Foreign Service, but it's hard to understand how effective it can be for the United States to take a position in an international forum and see how that has a domino effect leading other countries to ask the serious questions within their own governments, within their own ministries, coming up with positions to respond to the forcing of the United States.

I think this is a kind of leadership function in which we have not been performing well, indeed, scarcely at all, in the last few years, and we can do a great deal more. And having the information, the background, that this bill will help us provide, is a step in the right direction.

Thank you very much.

[The prepared statement of Mr. Lesh follows:]

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PREPARED STATEMENT OF DONALD R. LESH

EXECUTIVE DIRECTOR

GLOBAL TOMORROW COALITION

BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURAL RESEARCH, AND ENVIRONMENT

COMMITTEE ON SCIENCE AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

WASHINGTON, D.C. 20515

March 28, 1984

Mr. Chairman, I am Donald R. Lesh, Executive Director of the Global Tomorrow Coalition, a nonprofit, publicly supported consortium of more than 70 nongovernmental organizations whose concerns include national and global issues of population, environment, resources, development, wildlife protection, conservation, health, agriculture and education. The Coalition came into being in the spring of 1981 in large part out of a shared perception of the importance of the public policy questions posed by the Global 2000 Report to the President.

The combined memberships of the organizations represented in the Global Tomorrow Coalition total more than 6.5 million Americans, which -- even allowing for the inescapable factor of double counting -- is evidence of growing national interest in subjects such as that addressed in this hearing. The record should show, however, that, although my testimony today reflects my experience with the Coalition, I am speaking as an individual, concerned U.S. citizen.

I am grateful for this opportunity to express my strong support for the legislation that you and other Members of Congress have proposed to improve the capacity of the United States for national and international environment monitoring. I do so not only because I believe in the intrinsic merit of that goal, but because I attach great value to any such effort to enhance the ability of our government to provide complete, accurate, and current information as background for decisions in the Executive Branch and the Congress on long-term public policy issues.

I view the proposed environmental monitoring bill, in other words, as a limited -- but nonetheless highly significant and very welcome -- step toward improving the capacity of the Federal Government for what we in the Coalition term national foresight. That goal has the unanimous endorsement of the members of the Global Tomorrow Coalition.

What do I mean by national foresight? In simplest terms, it is a three-part process, including:

(1) the systematic collection of the most complete and accurate data available, from both government and private sources, on long-range national and global trends;

(2) the application of the most effective techniques -- including computer modeling when appropriate -- to the analysis of those data, and especially their interactions over time; and

(3) the timely reporting of the summary findings of that analysis to those with senior decision-making responsibility in elected and appointed government positions.

In the United States, the role of national foresight must be to serve the needs of the political decision-maker within an open system of representative democracy. The aim is to improve the quality of political choice, not to replace it with some closed, bureaucratic planning structure.' The rationale is clear: if we as a society must make decisions today that will affect the quality of life in this country for generations to come -- and we must -- do we not have an obligation to try to understand as much as possible about the potential long-term effects of our decisions before we choose among policy options?

One may ask whether we do not already understand those long-term effects. My answer would be no, or at least that we are still at a primitive level in our understanding. Global 2000 was a pioneering attempt to draw on the best available data and analytical resources of the Federal Government for a reconnaissance of where the world may be by the end of this century in terms of population, resources, and environment, assuming that current trends and policies remain unchanged and we continue to escape the catastrophe of nuclear war. As the first effort of such scope ever undertaken by a national government, Global 2000 had much of value to say about the substance of the issues. But perhaps its most arresting conclusion dealt with the process of decision-making:

> ...the executive agencies of the U.S. Government are not now capable of presenting the President with internally consistent projections of world trends in population, resources, and environment for the next two decades. (Volume II, p. 454)

If that serious self-indictment was valid in 1980, and I believe Global 2000 offered ample evidence that it was, it is even more valid today. Over the ensuing years, the U.S. Government has fallen backward in its ability to collect, measure, and analyze critical data on long-term trends as an adjunct to more informed decision-making. The budgets and staffs of key agencies and departments have been drastically cut at the very time when the demand for enlightened U.S. leadership has become more acute. Former President Jimmy Carter put it this way in his keynote speech to a conference of the Global Tomorrow Coalition on June 2-3, 1983:

> ...one of the most vivid lessons learned in the preparation of [Global 2000] was that the U.S. Government lacked -- and still lacks -- the capacity to assemble data or project and evaluate future trends in these vital global issues, to use this information in our own programs and decisions, and to work with other nations to solve these problems.

He went on to comment that:

> ...the deliberate, across-the-board abandonment of U.S. leadership on environmental, resource, and related global issues is of grave concern to us all. During the past two and one-half years, we have stood almost alone among nations in our refusal to cooperate with international efforts.

And President Carter suggested that the harmful effects of U.S. inaction would be felt far beyond our own borders:

> We must realize that, without leadership from within our own country, concerted action among other nations is unlikely.

To avoid any possible misinterpretation of my citation of remarks by a former Democratic President, let me stress that the issues we are dealing with are deeply political -- in the sense that they touch upon fundamental questions of the way in which we as a society choose to live, work, and govern ourselves -- but they are not partisan issues. They challenge the wisdom of every nation and government regardless of history, geography, culture, ideology, or political system. Issues of the environment are an excellent example, since they show no respect for state, regional, or national boundaries, and affect capitalist and communist with fine impartiality.

The United States now finds itself in an illogical and inconsistent position. Having taken the unprecedented step of commissioning Global 2000 and urging other nations to consider the implications of its findings, the United States is now doing nothing to take advantage of the opportunities presented by active responses of other governments such as those of Canada, West Germany, Japan, and the Peoples Republic of China -- not to mention groups such as the Organization for Economic Cooperation and Development and components of the United Nations system such as the United Nations Environment Program and Food and Agricultural Organization. The result is that we are now managing simultaneously to defeat our own national self-interest, confuse and disappoint our closest allies, and fumble an excellent chance to improve relations with our adversaries through cooperation on shared, non-ideological problems.

I wish I could say that Congress has resolved all problems related to improvement of its own foresight as background for legislative decision, but that judgment would be too generous. At least there has been steady and encouraging growth in the resources created by Congress to help address long-term national and global problems. I refer to such institutions as the Congressional Research Service of the Library of Congress, the General Accounting Office, the Congressional Budget Office, the Office of Technology Assessment, and the expanded foresight function of a number of Congressional committees. The energetic work of the Congressional Clearinghouse on the Future also has served to focus attention on the long-term implications of current legislation.

As we proceed to build a similar structure for better national foresight throughout the Executive Branch, I am convinced that the national interest will be served by an improvement in our capacity for environmental monitoring on a national basis, and in U.S. cooperation with other concerned nations on international environmental monitoring. Both of those purposes can be achieved through the Environmental Monitoring Improvement Act that is the subject of this hearing. I therefore applaud the intent of this bill, commend its sponsors, and urge its prompt recommendation by this committee and adoption by the House of Representatives.

Mr. SCHEUER. Let me just have you elaborate a little on this. You were in the Foreign Service?

Mr. LESH. Yes, sir, I was.

Mr. SCHEUER. And you observed, what, participants in conferences where the United States was involved in global monitoring programs——

Mr. LESH. Let's——

Mr. SCHEUER [continuing]. Urging their own governments to participate and do a better job? Just elaborate a little bit, I am very interested.

Mr. LESH. I'd be very happy to, sir. It's less—I could refer less to specific instances of conferences on environmental monitoring per se than on the whole structure of international conferences as a whole. And the function, the effect does not become evident immediately on the scene in the conference, it becomes effect months before when our representatives begin to make known to their counterparts in other capitals the kind of delegation; the shape of the position of the United States may follow; the questions we may ask.

And the other governments then, in their part, begin to say, my goodness, if the United States is going to do this, what are we doing? And they begin to say, well, why isn't this being done in our ministry? Why aren't we thinking about that for our delegation?

And to be effective it must begin 6, 8, 10, 12 months before the actual site is addressed—site is gathered, so that it's a longer term process. But there's no doubt that even among those who are perhaps not our greatest friends, the United States is regarded as an absolutely unique source of research and information, and leadership. And that we can play a much more positive role in the environmental area, internationally, than we have done heretofore.

Mr. SCHEUER. In other words, you are saying that for 8 or 10 or 12 months before the actual conference convenes, the fact that we're sending out papers, and asking questions, and sending out some preparatory information, all that has a sort of a stimulating effect on the recipient countries——

Mr. LESH. Absolutely.

Mr. SCHEUER [continuing]. And gets them to look inward, inwardly, let us say?

Mr. LESH. Absolutely, they want to be prepared. If they see the direction in which a major delegation such as the United States is moving, they would like to be prepared to appear responsible, and forthcoming, when they are under the scrutiny of some international body.

Mr. SCHEUER. That's very interesting. I appreciate your testimony.

All right. Mr. Peter Thacher, distinguished fellow of the World Resources Institute.

Mr. THACHER. Thank you, Mr. Chairman. I, too, will depart from my prepared text.

I served until less than a year ago as the deputy executive director of the United Nations Environment Program, and as such, and going back to 1971 when we prepared for the Stockholm Conference on the Human Environment, where I was program director, I

have had a hand in designing, creating, and trying to manage the existing global environment monitoring system.

Your opening remarks this morning, Mr. Chairman, reminds me, and perhaps others, that the scope of what the proposed commission will address should itself be carefully studied.

In this country we have a tendency, more than in many others, to consider environmental monitoring primarily in relation to pollution matters. In your opening remarks you referred to desertification and deforestation. These are issues that are of primary importance to most of the countries in the world, and these are areas which the global environment monitoring system embraces.

It also embraces a wide variety of pollution matters ranging from measuring chlorinated hydrocarbons in human tissue—and you'd be surprised what the levels are in this country as well as in other countries under a coordinated and intercalibrated program that UNEP runs through the World Health Organization—to looking at the change in the mass of glaciers, which is one of the best indicators of what is happening to the climate.

Work in all of these areas is very much dependent, as Mr. Lesh has just said, on an active participation by U.S. institutions. Now, many of these institutions are governmental, though one might not have realized that from the testimony given here earlier today by the first panel. For example, a good deal more is being done than was reported by both the NOAA and by the Geological Survey in relation, among other things, to glacier monitoring.

And there are many other institutions of government that are actively involved. The Bureau of Standards routinely supplies samples which are used for intercalibration at the international level.

The Department of Agriculture has a Tropical Forestry Institute that is a major player in the monitoring of changes in trends in deforestation.

I think that the problems at the global level are very much as they have been described here this morning; very largely problems of lack of clarity about the indicators that the attention that repetitive monitoring gives them; lack of methods, and insufficient quality control. Here are areas in which a good deal of leadership has been given at the international level, largely based on U.S. experience, but not exclusively. Very often the United States can afford a more sophisticated and a more higher quality program than may be needed by policymakers, even in the U.S. Government. So quality control, I think, has to be related to the purpose of which the data is to serve.

Mr. Chairman, just as the domestic effort could proceed faster and more economically with a greater involvement of private sector and nongovernmental organizations, many of which have got significant capabiities in the area of data collection, with a proper attention to the quality of the data, similarly, at the international level, the United States, I think, has everything to gain through enlarging international cooperative programs in which other countries share not only the provision of data but the funding of the exercise.

I think the commission, therefore, would be a very useful—and perhaps it would be difficult to do this without the commission—a very useful way to take an inventory of the totality of the United

States efforts in monitoring in a scope to be defined as a result of your hearings, but a scope that I would hope might include such sectors as genetic diversity, where the loss of diversity in flora and fauna is a subject today of international monitoring in which the United States is a participant.

But I would hope, as other speakers, that the work of the commission would not delay, on the contrary, I'm certain that it would be the intention that the commission would encourage greater coordination within the executive branch, including by agencies who are not yet participating; and I would suggest that the coordination of this effort within the executive branch of government be vested in a nonoperating entity in the monitoring field. The only two that I know of are CEQ and the State Department if the scope is to be broad to include forestry, desertification, and other sectors.

Thank you, sir.

Thank you very, very much.

[The prepared statement of Mr. Thacher follows:]

STATEMENT BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES,

AGRICULTURAL RESEARCH AND

ENVIRONMENT

PETER S. THACHER

DISTINGUISHED FELLOW

WORLD RESOURCES INSTITUTE

Mr. Chairman, I welcome the invitation to make a statement before this Committee on the pending bill, "Environmental Monitoring Improvement Act of 1984."

Before retiring last June I had been Deputy Executive Director of the United Nations Environment Program serving at its global headquarters in Nairobi since 1977. Before that I had directed the European office of that program in Geneva and had earlier served in 1971-72 as Program Director for the Stockholm Conference on the Human Environment which led to the creation of UNEP.

My vantage point is therefore international, rather than national, and derives from experience in creating and helping to direct an organization whose primary role includes the coordination of all environmental monitoring by governments, primarily through existing international organizations in the UN System.

Mr. Chairman, I have brought material describing the scope of UNEP's Global Environmental Monitoring System, GEMS, which

as you can see is very broad indeed, and very active in a variety of fields ranging from measuring the levels of chlorinated hydrocarbons in human tissue, to the rates of change in the mass of glaciers. I would of course be happy to describe this program further, the more so since its accomplishments are little known here.

But in the interest of time, I call your attention to the conclusion of the report, which was drawn up on an international basis as part of the conclusion to the first decade after the Stockhom Conference. It is entitled "The World Environment 1972 1982" and presents the single most comprehensive report on this subject. Its first general conclusion is both a good summary of substance as well as an indication of weaknesses directly relevant to thebill before this commitee:

> "The first general conclusion is that the data base is of very variable quality. Although this Volume contains a large number of tables and diagrams (and many more could have been provided) there are startling gaps and a special lack of reliable quantitative information about the environment in the developing world. This must be remembered when projections of the future state of the world environment are examined: many are based on only the scantiest of evidence about what, in fact, has been happenj.
>
> "On the world scale, there are measurements of the

major meteorological elements, of carbon dioxide and ozone concentrations in the atmosphere, of atmospheric turbidity and of precipitation chemistry. The distribution of exposure to ionizing radiation is now reasonably well-known and information on food contamination by some metals and organo-chlorine compounds is available from an increasing number of countries. There are also reasonably complete records of the surface distribution and flow of fresh waters.

The state of other environmental resources is less fully documented. A preliminary assessment of the state of tropical forests and the factors affecting them has been completed recently. There are also some good regional monitoring prorams, like those on various seas and for long-range transport of atmospheric pollutants in Europe and in North America, but these are not numerous.

"In spite of these data, it is difficult, in many cases, to undertake accurate environmental assessment. For example, it is premature to say with certainty whether worldwide climatic warming has begun (or is likely)*. There is still not enough evidence to permit confident judgements of possible human influence on stratospheric ozone. Although UNEP, other organizations and national governments have promoted some good programs of regional marine monitoring, there are no reliable global data on the pollution of the oceans and seas. The amount and condition

of ground waters is another area of uncertainty. On land, in spite of the recently completed preliminary assessment of tropical forests, there is conflicting evidence on the scale and rate of deforestation. There are general local and/or regional figures for the extent of deserts, rangelands, farmlands and other major land-use categories but detailed information about their condition - and rates of degradation - are rarely available.

"The information about some major human activities that affect the environment is rather better. Food production and fishery statistics are extensive, even if uncertainties remain about the state of the ecosystems on which fish and whale stocks depend. Demographic data on human populations and on birth and death rates are fairly complete and there are also good records of energy production and use, and of the scale of many major industrial activities and trade flows. But even in such areas as vital to mankind as health and disease, deficiencies in the data base for developing countries hamper the assessment of priorities for action, or of success and failure.

"There are many reasons for this situation. One is a lack of agreement on the parameters whose monitoring should receive priority. In the course of preparing this volume the editors attempted to list a small series of indicators that would be especially useful in judging the

state of man and environment around the world, but found that there were not enough well-documented ones to warrant inclusion in the final text. A second cause of incompleteness is a lack of universally agreed methods. There are other factors: what matters is the consequence that the world community has not yet achieved one of the major goals of the Stockholm Conference - the compilation, through a global program of monitoring, research and evaluation, of an authoritative picture of the state of the world environment. Even an imperfect series of environmental statistics, drawing together what we have (and, through its manifest inadequacies, providing a stimulus to better observation) would be an improvement on the present situation."

Mr. Chairman, the creation of UNEP and launching of GEMS was actively promoted and supported by the United States. Perhaps no country in the world today enjoys the luxury as much as the U.S. of "worrying about the future", for we have solved so many of the day-to-day problems which still beset most of the planet. But we have built a society which for all its success is vulnerable to surprise and unforeseen change. Whereas much of the world hardly notices an occassional electricity failure, in your city not so many years ago the results were traumatic, and even the birth rate jumped nine months later. Because of this and theextent of US investments in the future, I believe no country has a greater need for international cooperation to promote a better understanding of current trends and their implications than

the U.S. Certainly, no country has more to offer.

But what is striking about the US is the lack of coordination at the national level in its multitude of environmental monitoring effeorts. A variety of agencies are involved in covering the topics cited in the pending bill, and a recent publication by the C.E.Q. which reviews "U.S. Government Participationb in International Treaties, Agreements, Organizations and Programs in the Fields of Environment, Natural Resources and Population" makes clear that the task of drawing the effort together has not gotten any easier since the time of the hearings in this Committee on "National Environmental Monitoring" last year.

There are serious and adverse implications for the work of international organizations when a country as powerful as the U.S. speaks unclearly, or on the basis of sectoral, rather than an integrated policy on these matters. I believe a Commission along the lines suggested could have very beneficial effects far beyond this country.

Mr. Chairman, it will perhaps be self evident from these introductory remarks why I strongly support the bill, and would be glad to respond to questions or provide advice on any part of it.

Mr. SCHEUER. All right, now Mr. Leo Weaver, executive director of the Ohio River Valley Water Sanitation Commission.

Mr. WEAVER. Mr. Chairman, again, I'll follow the format and refine my remarks and specificaily to the statement that was submitted previously.

The first comment is that I believe the proposed act is responsive to the input that I have read and heard previously given to this committee—subcommittee before. And I certainly want to go on record clearly as supporting it in its concept and its intent.

And having said this, I'd like to point out certain areas that the attack—the act addresses which, in my view, are essential if the purposes are to be achieved. First, the act recognizes the need for more economical and efficient use of presently available resources to gain more and better information to manage the environment.

The commission it would create has a definite life expectancy. If it is to accomplish its assignment it must do so with full recognition of the substantial resources which are already being devoted to monitoring by industry and government at Federal, State, and local levels.

And the task, as I view it, is not one of solely seeking additional resources to meet monitoring needs but to the contrary, one where the task may be substantially accomplished through reordering priorities with attendant changes in the application of resources already available.

I would look to the proposed commission as pointing the way to accomplishing this goal, and in this achievement alone justify the funds stipulated to be appropriated to carry it out.

And I think the interstate commission that I represent has demonstrated very graphically the cost and program effectiveness of a regionally coordinated monitoring program developed and supported by government and industry. The fact that it's done on a problem shed basis and is in itself an important incentive, and a national program is made up of elements of problem shed approaches.

The downstream entities, they receive the benefits of upstream work, information and intelligence, each in effect receives benefits and affords benefits to others; and that means that each has a vested interest in it, and it's a mutually beneficial undertaking.

Finally, I think that the important element of success of the commission's programs can be attributed to the participation of those concerned, both in government and industry, as well as the public, environmental considerations, conservation, recreation and health interests.

This is evident in the planning as well as the operation phases and, therefore, in the accountability for a monitoring and surveillance system's success or failure, the vested interest of each group. And that is very important, the accountability of the participants.

I think the proposed act enables consideration of these factors. Most important, again, it provides for encouragement of the multimedia evaluation direction which, in my view, heretofore has been largely absent.

Finally, it has the added international perspective which—and leads to the conclusion that Congress should move ahead with the enactment of this measure.

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And I would conclude with one thing: In the many years that it has been my privilege to serve as a professional in the field of environmental control, I have observed that for one reason or another that it has been the Congress that has demonstrated the leadership that was necessary to move out. This has relatively seldom come from the executive branch. I would not attempt to analyze the reasons for this, but it is an observation on experience, and I think the record would uphold that very distinctly.

I thank you for the opportunity of being here.

[The prepared statement of Mr. Weaver follows:]

OHIO RIVER VALLEY WATER SANITATION COMMISSION

Statement given by Leo Weaver
To Subcommittee on Natural Resources, Agriculture Research and
Environment of the Committee on Science and Technology
US House of Representatives
March 28, 1984
Washington, D.C.

Mr. Chairman, members of the Subcommittee:

My name is Leo Weaver. I am the Executive Director and Chief Engineer of the Ohio River Valley Water Sanitation Commission (ORSANCO).

The Ohio River Valley Water Sanitation Commission is an interstate water pollution control agency formed in 1948 by authority of a Compact of the States of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia and West Virginia. The Commission acts as an instrument of the states in controlling and abating water pollution in the Compact District. It conducts surveys, carries out surveillance programs and promulgates standards of treatment for municipal and industrial discharges in the Ohio River. It has regulatory authority. The Commission consists of 27 Commissioners, three from each of the 8 states, gubernatorially appointed and 3 presidentially appointed Commissioners to represent the Federal Government.

The Commissioners are assisted in developing and establishing policy by a Technical Committee made up of officials of State and Federal agencies with responsibilities in the water management field. Because of this commonality of interest and regularity of meeting, communications and cooperation between the States and the Federal government in Ohio River Valley water pollution control programs have been extensive throughout the Commission's existence. In addition, advisory committees representing citizens interest, water utilities, publicly owned wastewater treatment plants and various industries, provide input to the Commission's programs.

Mr. Chairman, systematic acquisition and assessment of information on water quality conditions have been and continue to be the cornerstone of the Commission's programs. Without them we could not function effectively. It is as simple as that.

I accompanied the then Chairman of ORSANCO Lloyd Clausing when he testified at the May 25, 1983 hearings of this subcommittee. The testimony I heard as well as the record summary that was made available subsequent to the proceedings clearly showed the need for coordination and more effective planning and implementation of present monitoring systems on a national basis. I believe the proposed Environmental Monitoring Improvement Act of 1984 is responsive to this input and I support its enactment.

Having said that I would take a few moments to point out certain areas that the proposed Act addresses which in my view are essential if the purposes of the Act are to be achieved.

First, the proposed Act recognizes the need for more economical and efficient use of presently available resources to gain more and better information to manage the environment. The commission it would create has a defined life expectancy and if it is to accomplish its assignment it must do so with full recognition of the substantial resources already devoted to monitoring by industry and government (Federal, State, Local). The task, as I view it, is not one of solely seeking additional resources to meet monitoring needs. But rather it is a task that may be substantially accomplished thru reordering priorities with attendant changes in the application of resources already available.

I would look to the proposed commission to point the way to accomplishing this goal and in this achievement alone justify the funds stipulated to be appropriated in the proposed act.

The interstate commission I represent has demonstrated very graphically the cost and program effectiveness of a regionally coordinated monitoring program developed and supported by government and industry. The fact that it is designed on a "problem shed" basis is in itself an important incentive. Thus downstream entities receive the benefits of upstream intelligence and information which results in more effective and cost effective planning and operation. The upstream and downstream hats are interchangeable for the most part for any given entity in a segment of the river system. So almost all have a vested interest.

Thus an important element of the success of the commissions programs can be attributed to the participation of those concerned in both government and industry, as well as the public, including environmental conservation, recreation and health interests. This participation is evident in the planning as well as the operation's phases and therefore in the accountability for a monitoring and surveillance systems' success or failure.

The provisions of the proposed Act enables consideration of the above. Most important it provides for consideration that will encourage a multi-media evaluation and direction which heretofore has been largely absent. This together with the added international perspective leads to the conclusion that the Congress should move ahead with the enactment of this measure - hopefully in its present session.

Thank you for the opportunity to present this statement.

Mr. SCHEUER. Thank you very much, Mr. Weaver.

I agree with that last comment of yours and I will resist, summoning up all my will power, that temptation to elaborate on it in extenso.

We will now hear from Mr. William Sylte,—Is that Sylt or Sylte?

Mr. SYLTE. Sylte, sir.

Mr. SCHEUER. Sylte. Chief executive officer of the California Air Resources Board.

Mr. SYLTE. Thank you, Mr. Chairman.

I am here today representing not only the California Air Resources Board but other State air pollution control directors across the country. One of the virtues of being dead last in the order is that if I had anything wise to say, it's probably been said more eloquently by now than I could say it anyway, so I can risk being very brief and just summarizing our remarks.

First, we certainly believe that the committee has chosen the right course of action. We do support the creation of a temporary commission with full staffing. We've seen this concept work, at least in terms of the analysis they produced with the National Commission on Air Quality a few years ago; and we think the commission and the staff performed very, very well on—in that instance, and we think—we can't resist making a parallel here. We think that this should work very well too.

Since I'm representing air pollution directors; I'll concentrate on just a few pragmatic concerns of the type which we often burden our Federal colleagues at EPA whenever they propose anything new.

My points are each addressed I think to some extent already in the legislation, but I wanted to repeat them here for emphasis.

I believe that the key to the success of the commission is its credibility among the Federal, State, and local environmental program managers that are out there in the field now, and so that's essentially why I feel these three points are very important.

First, as others have said, I think the commission needs to be in fact and in perception, independent. By that I mean it must be able to work with the divergent vested interests that are there now, and

to respect those interests; but it has to be able to resist the dominance of any Federal agency or interest.

Mr. SCHEUER. For that to be effective, would it require any changes in the legislation as it's now written?

Mr. SYLTE. I certainly don't see any disincentive to that in legislation, I think that seems to be the intent. And I'd be glad to submit written changes if you think that's indicated.

Mr. SCHEUER. Yes, if you think any changes might be indicated, please do——

Mr. SYLTE. Thank you.

Mr. SCHEUER. Write us.

[The information follows:]

STATE OF CALIFORNIA — GEORGE DEUKMEJIAN, Governor

AIR RESOURCES BOARD
1102 Q STREET
P.O. BOX 2815
SACRAMENTO, CA 95812
(916) 322-2890

April 23, 1984

The Honorable James H. Scheuer
Chairman
Subcommittee on Natural Resources,
Agriculture Research and Environment
Committee on Science and Technology
Suite 2321 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Scheuer:

Attached per the request of Mrs. Ralston of your staff are my comments on the verbatim transcript of my recent appearance before your committee. I have also attached some proposed regulatory language changes, as you requested during the hearing.

You also asked the panel I was on whether we felt the $15 million allocated for the National Commission on Environmental Monitoring was adequate. Upon reflection, I believe that this level of funding constitutes a "bare bones" budget for a small and dedicated staff, and could necessitate more reliance on the resources of existing federal agencies than is desirable. You may wish to provide for supplemental funds on an "as needed" basis.

It has been my honor and pleasure to participate in this hearing process. Please accept my best wishes for the success of this legislation and your efforts to improve environmental monitoring.

Sincerely,

William W Sylte

William W. Sylte
Chief Deputy Executive Officer

Attachments

Suggested Change to Section 4 of the Proposed
National Environmental Monitoring Act

Section 4(a)(1) "make a full ~~and~~ complete and independent investigation and study ..."

New paragraph to insert between 4(e) and (f)

"In conducting its study the Commission shall exercise independent judgement concerning the adequacy of existing monitoring efforts and the proper course of future action. In so doing the Commission will consult with all parties including federal executive and legislative branch agencies, state and local agencies, colleges and universities and experts in the private sector."

Mr. SYLTE. The second point is that I believe it should be the clear goal of the commission and its report to develop improvements in the national monitoring program, which actually increase the effectiveness of existing environmental programs, particularly those which concern themselves with public health.

This sounds basic, fundamental, almost mundane, but I can assure you it's not a trite consideration. When I discussed this legislative proposal with my colleagues, I found that quite a number of them feared that an overall national monitoring program might actually detract from ongoing efforts to improve air quality.

I feel that the wariness of environmental program administrators, like my colleagues, could be a potential problem to the commission, and could, to some extent, undercut its success.

One gesture which we feel might be helpful is to reserve a seat on the commission for a State Environmental Program Administrator. Perhaps the National Governors' Association could aid in the selection of that person.

I also believe that it's important to consider the expertise in State and local government when the commission is staffed. There are a number of administrative ways in which professionals who have been operating at the State and local level could be made available to the commission during its lifetime.

Finally, I'd like to echo the concerns of others who've said that they certainly hope that the completion of the commission's mission would be followed in short order by congressional action to implement it. I, too, am worried about a 3- to 5-year hiatus.

I think there's critical need to improve environmental monitoring in a number of areas, in particular the area of air toxics. And so we can't afford to wait all of that period of time, we've got to continue to move forward. At the same time, when this very large effort is completed, we certainly hope that prompt congressional action would be taken to implement it. That is not, unfortunately, the experience of the National Commission on Air Quality that I alluded to earlier. Their recommendations have not, and probably never will be, acted on as a whole.

In closing, I'd like to echo the appreciation that others have expressed to the committee for its consideration of this issue. It's often overlooked in the pursuit of more glamorous issues and we deeply appreciate your concern and your awareness.

Thank you.

[The prepared statement of Mr. Sylte follows:]

Statement of William W. Sylte,
Chief Deputy Executive Officer,
California Air Resources Board

Before the

Sub-Committee on Natural Resources,
Agriculture Research and Environment,
James H. Scheuer, Chairman

March 28, 1984

It was my privilege to testify before this Sub-Committee last May on this subject. I was one of a series of witnesses who told you about our environmental monitoring problems and who recommended various solutions -- to our own problems at least. I hope we were of some help to you. Rather than trying to unravel directly the jumble of information and advice we gave you, you have seized on a traditional, yet innovative solution. You are proposing to delegate the unenviable, but necessary task of developing a national monitoring program to a well-staffed, temporary commission.

I believe, as do many of my colleagues, that you have chosen the correct approach. Only a careful, deliberate study of this difficult problem can produce a national monitoring program that meets the varied needs of active public health and environmental protection programs and simultaneously serves the broad public interest. There is an irresistible parallel for those of us in the air pollution control field between the proposed National Commission on Environmental Monitoring and the

National Commission on Air Quality which was given a comparable challenge by the Congress in the late 1970's. That experience indicates to us that a dedicated set of Commissioners and a knowledgeable staff can sift through an excruciatingly complicated issue, and produce a thorough and intelligible analysis and a strong set of recommendations.

Rather than analyze the Environmental Monitoring Improvement Act as written, I will discuss several points which I suggest be given thorough consideration in your deliberations. They concern the Commission's standing, its goals, and the use to be made of its recommendations.

The Act already recognizes these points and addresses each to some extent. I have chosen to emphasize them here as a supporter of the Commission concept who believes it is very important to be pragmatic about the chief requisite to a successful completion of its mission. I believe that the key to success is credibility among federal, state and local environmental program administrators and their supporters.

I feel the Commission needs to be, in fact and perception, independent -- by which I mean, able to work with all interested parties but capable of resisting the dominance of any existing institution or interest. Existing agencies, particularly at the federal level, have an obvious vested interest in various sectors of the monitoring effort. Those interests must be respected, but not allowed to steer or bias the analysis. The various tasks

of enhancing the national environmental monitoring effort should be given to those institutions best able to do the job, not necessarily to those who are the most successful at bureaucratic maneuvering.

I also believe that it should be the clear goal of the Commission to enhance the effectiveness of existing environmental programs. While this may sound fundamental, and almost mundane, I can assure you that it is not a trite consideration. In discussing the proposed Act with my colleagues, I found that their biggest concern was that a national air monitoring program would end up doing the opposite -- actually detracting from ongoing efforts to improve air quality. Many of us at the state and local level have experienced instances in which well-intentioned federal efforts have intruded on our priorities and siphoned off our relatively meager resources to pursue broader and sometimes inflexible federal purposes. For this reason, a number of state air directors view this legislative proposal with caution.

I feel strongly that the wariness of environmental program managers like these air directors has the potential to undercut Commission efforts. If the Commission or its actions are deemed threatening, wariness will turn quickly into various forms of resistance. If on the other hand, these managers perceive the Commission and its deliberations as an opportunity, the Commission and staff will benefit enormously from the expertise and support of those who are in the front lines of environmental monitoring in this country.

One gesture which would be very helpful is to establish a seat on the Commission for a state environmental program administrator. The National Governor's Association could aide in the selection. I believe that expertise in state and local programs is also important in the selection of staff to the Commission. Hundreds of state and local agencies around the country conduct a large part of the current national monitoring effort. I believe our expertise and support are vital to the Commission.

Finally, I urge that every effort be made to insure that the Commission's recommendations lead directly to Congressional action to implement the changes that are indicated. The experience of the National Commission on Air Quality is sobering in this regard. Despite the appointment of a Chairman and a group of Commissioners with the prestige and influence to see through the implementation of its recommendations, there has not been, and likely will never be, Congressional action based on the comprehensive set of proposals they made. While environmental monitoring is far less divisive than the air quality regulatory program, I am still concerned that a three to five year process could leave us in no better position than we are now. There is, as many of us testified last year, an urgent need to improve environmental monitoring in a number of subject areas.

In conclusion, I would like to express the admiration of state air pollution control directors throughout the country for the work of this Sub-Committee. Environmental monitoring is a difficult and, to many, an arcane subject. While accurate data is the very foundation of effective environmental policy, monitoring needs are often overlooked in the pursuit of more glamorous issues. Your awareness and support are deeply appreciated.

Mr. SCHEUER. That's very kind of you, and I appreciate it. And I appreciate your patience, especially this last panel, the hour is very late.

Let me just ask you one or two questions.

Do you feel, any of you, or all of you, that the 3 years and the $15 million that we have provided in this commission bill are adequate to analyze our participation in national and international monitoring networks, as well as deal with our own national programs?

And, second, while you answer that, what percentage increase in workload on the back of the commission do you estimate that the international programs would represent?

In other words, you can in addition to coordinating all the national programs, we want you to have a good look at the global programs and come up with some kind of a plan for—to—better to coordinate and organize the global programs. Would that be a 10 percent add-on to their work, or a 50 percent add-on to their work, or what?

Mr. WEAVER. Mr. Chairman——

Mr. SCHEUER. Above all, let us know about the adequacy of the 3 years and the $15 million. Yes?

Mr. WEAVER [continuing]. If I might comment on the first part of the question, and the other members of the panel comment on the global part of it. I was very encouraged today as I heard the part of the agency representatives testimony as to the attention that they are already paying toward the needs and reassessments.

Given that kind of input, I believe that the amount of money included should meet the need. Again, the caveat is that it would be dependent on the support from the Federal and other agencies concerned, as well as the industrial enterprises, to give of their time toward achieving a goal which they feel needs to be achieved.

Mr. SCHEUER. Anybody else? Yes?

Mr. THACHER. Mr. Chairman, on the first question on the 3 years' adequacy, my own view would be that the Congress probably has other means by which to prepare the way. It might be possible to speed up the inventory work that would precede such a—a study if it were delegated out to parts of the executive branch and also some of the investigative arms that are available to the Congress.

On the additional cost in terms of the percentage at the international level for global program, I should point out that at present level, the biennium 1984-1985 is budgeted at $5 million—that's the total cost at the international level—for stimulation, coordination, intercalibration, and supporting work, including training, to improve the quality of data.

The budget, however, is not in hand, and so the program is running at about a $3 million level instead of the $5 million level.

So very small amounts of money are being spent at the international level, where I think improvements and increases in funding would allow a correspondingly greater advances in efficiency and coverage at the national level, because that's where the work is done.

Mr. SCHEUER. Maybe you could—maybe you could give us some idea of what you think we ought to do at the international level.

What would constitute a—a global environmental monitoring program, and what could be our organizing and facilitating role?

Mr. THACHER. Well, Mr. Chairman, although the representatives of the executive branch who spoke here today don't seem to know it, there is a global environment monitoring system which was created by the U.S. Government, by leadership on the part of the U.S. Government, in 1972, at the Stockholm Conference.

The United States has been the principal supporter of the global environment monitoring system, both through money as well as through active participation on the part of government institutions, as well as by nongovernmental institutions. There are several dozen U.S. academies and universities who are actively involved in the design as well as the execution of some of the sectoral monitoring programs that are run on a global basis today.

The most recent report on contaminants showing up in human tissue, which is an area of particular concern at the global level, includes data from American institutions, coordinated by EPA, which show levels that are a matter of growing concern, though they have not yet apparently surfaced in the public forum.

The work going on with regard to glaciers, where changes are a very sensitive indicator of the possibility of climate variations due to CO_2 and other greenhouse gases, are very much dependent upon data from Landsat, which is coordinated through the geological survey with regard to measurements in Antarctica in particular.

And NOAA has a very active role to play with regard to American glaciers that is now literally intercalibrated through an institution in Zurich with similar data being obtained from China, both on the ground and from satellite as well as the Soviet Union and other countries in which glaciers can be found.

So I think that the U.S. position of leadership which Mr. Lesh has referred to, is an absolutely critical one. It's more than money; it's ideas, it's experience, and it's the American sense of innovation and willingness to try something new.

Mr. SCHEUER. Are you satisfied with the institutional arrangements for global environmental monitoring, or do you think that some improvements could be made?

Mr. THACHER. I think that the general framework of them is satisfactory.

Mr. SCHEUER. Yeah.

Mr. THACHER. I think that what's missing is a better participation particularly amongst the OECD countries. Whether the United States makes a move or not will be very influential. OECD countries have got more experience in this matter of monitoring than any other group of countries in the world.

Mr. SCHEUER. More than we have?

Mr. THACHER. Collectively——

Mr. SCHEUER. Um-hum.

Mr. THACHER [continuing]. They have more than the other countries in the world.

And certainly the Europeans have got more experience under a GEMS program than the United States does, which relates to the treaty to which the United States is a signatory state on transboundary pollution.

I pers—I approve projects back as much as 8 years ago which—which set up new means of measuring wet and dry deposition rates for acidity in precipitation over western and eastern Europe.

These programs are well advanced, though the United States is not an active participant in them.

Mr. SCHEUER. Anybody else?

Well, we are verging on 5 o'clock, and we thank you again very much for your patience.

The hearing is adjourned.

[Whereupon, at 4:40 p.m., the subcommittee adjourned.]

APPENDIX

ADDITIONAL MATERIALS SUBMITTED FOR THE RECORD

98th CONGRESS
2d SESSION

H.R._____ (Original signature of Member)

HLC

Insert title here ☞

To provide for improvements in the Nation's environmental monitoring programs, to establish a National Commission on Environmental Monitoring, and to enhance United States participation in international monitoring programs.

IN THE HOUSE OF REPRESENTATIVES

_____, 19__

Insert sponsor's names here ☞

Mr. Scheuer (for himself [See attached list of cosponsors]) introduced the following bill; which was referred to the committee on _____

A BILL

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

39-742 O - 85 - 9

Short Title

Section 1. This Act may be cited as the ''Environmental Monitoring Improvement Act of 1984''.

Findings; Purposes; Definition

Sec. 2. (a) The Congress finds and declares that--

(1) environmental monitoring includes the systematic measurement of ambient environmental quality and associated activities related to quality control, data management, analysis, and dissemination, and does not include point source pollutant monitoring for compliance or enforcement purposes;

(2) environmental monitoring is a key to the identification of national and global environmental trends and future problems;

(3) during the last two decades it has become clear that further study and documentation of the deficiencies in the Nation's environmental monitoring programs and international monitoring programs in which the United States participates is needed, and that further research is needed regarding how to coordinate national ambient monitoring programs most cost-effectively;

(4) numerous environmental reports are unanimous in calling for improved national environmental monitoring and enhanced United States participation in international programs;

(5) deficiencies in environmental monitoring programs include failure to meet the full range of demands for high-quality data and analyses; failure to use scientific principles in design, operation, and analysis; poor coordination among existing monitoring programs; and institutional barriers to adequate monitoring;

(6) in recent years no significant progress has been made towards correcting the many problems in environmental monitoring;

(7) large amounts of our Nation's resources are being spent on monitoring the environment, and these resources are not being utilized cost-effectively; and

(8) improvements could be made in our Nation's environmental monitoring programs and international programs in which the United States participates which would result in more economical and efficient use of resources to gain more and better information to manage the environment.

(b) It is not the purpose of this Act to review, evaluate, or summarize monitoring conducted for enforcement purposes under any other Federal law.

(c) As used in this Act, the term ''environmental monitoring'' does not include any monitoring conducted for enforcement purposes under any other Federal law.

Environmental Monitoring Report

Sec. 3. (a) On February 1, 1986, and annually thereafter, the Administrator of the Environmental Protection Agency shall submit to the Chairman of the Council on Environmental Quality and to the Congress, a report (hereinafter called the ''Environmental Monitoring Report'') setting forth--

(1) an inventory and description of the scope of all existing national programs and international programs in which the United States participates, either directly or through support programs, for measuring natural resource trends, and the quality of the physical environment (including those components defined in section 201(1) of the National Environmental Policy Act of 1969);

(2) an evaluation of each national and international ambient environmental monitoring program described in paragraph (1) of this subsection, including (but not limited to) information on effectiveness, quality of data, and comparability with other data;

(3) selected environmental quality data, or summaries thereof, pertaining to the quality of the physical environment (including those components defined in section 201(1) of the National Environmental Policy Act of 1969); and any other environmental quality information needed by the President or by the Council on

Environmental Quality for the preparation of the Environmental Quality Report required by section 201 of the National Environmental Policy Act of 1969; and

(4) a report on the status of implementation of the recommendations made by the National Commission on Environmental Monitoring, established by section 4 of this Act.

(b) The first Environmental Monitoring Report shall be designed and prepared with the advice and assistance of the National Commission on Environmental Monitoring, established by section 4 of this Act.

(c) The heads of departments, agencies, and instrumentalities of the executive branch of the Federal Government shall provide such assistance as needed by the Administrator of the Environmental Protection Agency to evaluate environmental monitoring programs and to prepare the Environmental Monitoring Report.

National Commission on Environmental Monitoring

Sec. 4. (a) There is established a National Commission on Environmental Monitoring which shall--

(1) make a full and complete investigation and study of the Nation's environmental monitoring programs and those international monitoring programs in which the United States participates (directly or by providing support) and recommend to the Congress and the President

a plan to improve environmental monitoring; and

(2) advise and assist in the preparation of the first Environmental Monitoring Report, in cooperation with the Administrator of the Environmental Protection Agency, as required by section 3 of this Act.

(b) Such Commission shall be composed of fifteen members, including the Chairman of the Council on Environmental Quality, the Administrators of the Environmental Protection Agency and of the National Oceanic and Atmospheric Administration, the Director of the National Institutes of Health, of the National Bureau of Standards, and of the United States Geological Survey; and nine members selected by the President from a list of at least 15 nominees chosen by the National Academy of Sciences and representing State and local governments; regional and international commissions; industry; scientific and academic experts; and environmental, conservation and health groups. The Chairman of the Commission shall be elected by the Commission from among its members.

(c) The Commission shall, not later than three years after the date of enactment of this Act, submit a report as described by section 5 to the Congress and the President of the results of its investigation and study, together with recommendations for improvements in national environmental monitoring and United States participation in international

and global monitoring programs. Upon submission of such report or upon expiration of such three-year period, whichever is sooner, the Commission shall cease to exist.

(d) The heads of the departments, agencies, and instrumentalities of the executive branch of the Federal Government shall cooperate with the Commission in carrying out the requirements of this Act, and shall furnish to the Commission such information as the Commission deems necessary to carry out this Act.

(e) The Congressional Budget Office, the General Accounting Office, the Congressional Research Service of the Library of Congress, the Office of Technology Assessment, the Congressional Clearinghouse on the Future, and other entities within the legislative branch shall make available to the Commission such information as may be required for the purpose of carrying out this Act.

(f) In the conduct of the study the Commission is authorized to contract, subject to the availability of appropriations therefor, with nongovernmental entities that are competent to perform research or investigations in areas within the Commission's mandate, and to hold public hearings, forums, and workshops to enable full public participation.

(g) The members of the Commission who are not officers or employees of the United States, while attending

conferences or meetings of the Commission or while otherwise serving at the request of the Chairman shall be entitled to receive compensation at a rate not in excess of the maximum rate of pay for grade GS-18, as provided in the General Schedule under section 5332 of title V of the United States Code, including traveltime and, while away from their homes or regular places of business, they may be allowed travel expenses, including per diem in lieu of subsistence as authorized by law (5 U.S.C. 73b-2) for persons in the Government service employed intermittently.

(h)(1) The Commission may appoint and fix the rate of pay of such staff as it considers necessary for the performance of its functions. Such staff may be appointed without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and may be paid without regard to the provisions of chapter 51 and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates, except that no individual so appointed may receive pay in excess of the annual rate of basic pay payable for GS-18 of the General Schedule.

(2) The Commission may procure temporary and intermittent services under section 3109(b) of title 5 of the United States Code, but at rates for individuals not to exceed the daily equivalent of the maximum annual rate of

basic pay payable for GS-18 of the General Schedule.

(3) Upon request of the Commission, the head of any Federal agency is authorized to detail, on a reimbursable basis, any of the personnel of such agency to the Commission to assist the Commission in carrying out its duties under this Act.

(i) The Commission may, for the purpose of carrying out this Act, hold such hearings, sit and act at such times and places, take such testimony, and receive such evidence, as the Commission considers appropriate. The Commission may administer oaths or affirmations to witnesses appearing before it.

(j) The Commission may use the United States mails in the same manner and under the same conditions as other departments and agencies of the United States.

(k) The Administrator of General Services shall provide to the Commission on a reimbursable basis such administrative support services as the Commission may request.

Contents of the Report of the Commission

Sec. 5. (a) The report of the Commission shall contain--

(1) a statement of the goals of national and international environmental monitoring, including (but not limited to) establishing national and international environmental quality and natural resource base-lines

and trends, anticipating potential environmental problems, and supporting national and international environmental policy decisions;

(2) specification of the different types of monitoring of environmental quality, including (but not limited to) pollution source monitoring and natural resources monitoring, and the specific uses and applications of data generated by each type of monitoring;

(3) an assessment of the costs and benefits of environmental and resource monitoring;

(4) a statement identifying the environmental quality and natural resource data (and its form and quality) necessary for policymakers, and the public to make informed, cost-effective, scientifically based decisions;

(5) a statement of appropriate roles in and contributions to environmental monitoring programs by Federal, State, and local governments; regional and international commissions; industry; scientific and academic experts; and environmental, conservation, and health groups;

(6) a description of all national environmental monitoring progams and those international and global programs in which the United States participates

(directly or by providing support), including the following: statutory mandates; organizational and institutional arrangements; manpower, laboratory, and budgetary resources; areas of overlap and of gaps; contributions to international monitoring programs; quality controls; data availability; and strengths and weaknesses, including the ability to generate monitoring data necessary for comparisons across various environmental media;

(7) a statement of the information that should be contained in future editions of the Environmental Monitoring Report required by section 3 of this Act, including information on the status of implementation of the recommendations made by the Commission;

(8) an assessment of the adequacy of existing monitoring programs to supply such information;

(9) a description of a comprehensive national environmental monitoring program, including recommended improvements, encompassing Federal, State, local, regional, private and academic monitoring activities, that will (A) be cost-effective, (B) supply information essential to informed decision-making by the President, the Congress, regulators, and Federal, State, and local government policymakers generally, and (C) make such information available to regional and international

commissions; industry; scientific and academic experts; and environmental, conservation, and health groups;

(10) recommended improvements in United States participation in international monitoring programs which would enhance the capability of these programs to meet United States and global environmental and natural resource data needs and contribute more effectively to informed environmental policy decision-making; and

(11) an implementation plan for creating improvements in environmental monitoring, which shall include (A) immediately necessary improvements in environmental monitoring needed to fulfill the data needs for current and future Environmental Monitoring Reports described in section 3(a); and (B) specific steps to implement the national environmental monitoring program described under paragraph (9) of this subsection and improvements in United States participation in international programs described in paragraph (10) of this subsection.

(b)(1) In preparing the plan required by subsection (a)(11), the Commission shall--

(A) consider the necessity for strong scientific and statistical leadership in the management of the Nation's environmental monitoring programs;

(B) assess the need for and desirability of

adjustments in budgets, personnel, and responsibilities among programs for environmental monitoring to ensure cost-effectiveness, data compatibility, coordination among the various components of the national monitoring program, quality control, and data availability;

(C) consider the use of incentives for collecting monitoring data and improving the quality of the data;

(D) identify mechanisms for improving the coordination of monitoring programs and for the compatibility of data collected;

(E) assign priorities for improvements in environmental monitoring and specify a schedule for completion of the various parts of the implementation plan;

(F) recommend procedures for reporting on and evaluating the status of the implementation of the recommendations made by the Commission and for identifying problems and making necessary adjustments in the plan; and

(G) consider any other environmental monitoring issues, needs, constraints, opportunities, recommendations, or other matters the Commission determines to be appropriate.

(2) In preparing the part of the plan required by subsection (a)(11), the Commission shall, in addition to the

requirements of paragraph (1) of this subsection--

(A) consider at least two scenarios which (i) assume the national environmental monitoring program to be based on existing institutional structures and at existing funding levels; and (ii) assume any reasonable organizational and institutional changes and funding levels that the Commission might recommend;

(B) quantify, to the extent possible, the benefits and costs of the plan; and

(C) recommend any legislation and other actions necessary to carry out the plan proposed by the Commission.

Authorization of Appropriations

Sec. 6. (a) There is authorized to be appropriated, for use by the Commission in carrying out this Act, $15,000,000.

(b) There is authorized to be appropriated to the Environmental Protection Agency for preparing the Environmental Monitoring Report and for carrying out the recommendations of paragraphs (9) and (10) of section 5(a) of this Act, $1,000,000.

ANDREW ROBERTSON, DIRECTOR
NATIONAL MARINE POLLUTION PROGRAM OFFICE
NATIONAL OCEAN SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

As requested by Chairman Scheuer, I would like to offer some suggestions on how to improve coordination of the Nation's environmental monitoring programs without adding, what is I feel, the unnecessary complexity of a National Commission on Environmental Monitoring.

The most vital requirement for improving coordination of national efforts in environmental monitoring is to reach some agreement on what can or should reasonably be expected from such activities. Often complaints are heard that some specific environmental problem was not detected by our monitoring efforts or was only detected long after it should have been. Yet when these complaints are investigated, it is frequently found that no monitoring program existed that could reasonably have been expected to provide the information desired. Monitoring programs like all other scientific endeavors require clear, limited objectives. It is not reasonable to expect monitoring to provide answers to all we might like to know about the state of the enviroment now and in the future. We must select the most vital objectives and then concentrate our limited resources toward meeting these objectives.

When a monitoring program is being established, it is necessary to know what is hoped to be accomplished so decisions can be made regarding what, how, and when to sample. However, in making these decisions it also follows that many potentially important aspects must be left out. For example let me expand a little on some of the questions associated with developing a monitoring program for environmental concentrations of toxic synthetic organic chemicals in the marine environment. There are thousands of these chemicals being released to our coastal oceans, and these mix with many thousands of natural organic compounds that are

already present. Most of these chemicals are present in only minute quantities, and it is very expensive to analyze for contaminants at such low concentrations. Which of the few we can afford to monitor should receive our attention? When these are chosen, we can not then expect the program to tell us whether problems are developing due to chemicals that are not included. Also we must decide where to monitor for these chemicals. Concentrations can vary greatly over relatively short distances, especially on land, but also at times in the aquatic environment. If the objective is only to follow the general overall national trend for concentrations of certain specific toxic organics, a series of relatively few stations spread around the coasts may be adequate. However, if the objective is to detect any areas where the concentrations of these chemicals are increasing toward dangerous levels, many more stations distributed quite differently may be required. Similarly, decisions must be made regarding such aspects as how often to sample, what environmental phase (e.g. water, sediment, organisms) to sample, and what accuracy of results will be adequate. Only the establishment of unambiguous objectives allows such questions to be answered in a meaningful manner.

A second and related requirement for coordination of our national monitoring efforts is to establish what is the appropriate Federal role in this area. Obviously state and local governments as well as industrial concerns and other private organizations have very major roles to play in environmental monitoring. Is the Federal role only to coordinate the activities of others and to establish the national status and trends in environmental quality based on whatever data are available? Or should

the Federal agencies determine what is needed to establish status and trends and then fund any data gathering needed to fill the gaps found in the data being collected by others? Or does the Federal role go even further and call for an extensive Federal monitoring program throughout the country to assure that any threats to environmental quality or human health are detected and steps taken to correct them? A more clearly defined delineation of the Federal role would set the bounds on what can be expected from Federal activities and what can not.

Resolution of these two issues would go a long way toward putting our national monitoring efforts on a solid footing. The proposed commission is one way to attempt to fill the needs in these two areas. However, it seems to me that congressional guidance is what is really needed and that setting up a commission and then waiting several years for the results of its deliberations, will, quite likely, only add another layer of complexity and delay to the process.

Also I do not believe that the role proposed for the commission in surveying existing monitoring programs and making recommendations on how to improve our national monitoring efforts should be assigned to a new organization. There are a number of existing organizations that have responsibilities related to this charge. I have already given three examples of these from within my own agency, NOAA, in this testimony. I do not believe a new organization is needed to conduct its own independent study doing many of the same things that are being done already. Instead, I suggest we need an organization that can pull together the activities and expertise of the diverse existing Federal monitoring coordination efforts. This organization would then take the lead in

developing an evaluation of national monitoring efforts and in recommending improvements. I believe the established responsibilities and position in the Federal structure of the Council on Environmental Quality place it in an unique situation to assume this role. Again, congressional guidance would probably be required to provide a clear charge and backing to CEQ. However, I believe, using CEQ, with support from the existing activities that already have responsibilities to coordinate aspects of our national environmental monitoring efforts, could more efficiently, effectively, and economically improve the national monitoring program than would the establishment of a new organization such as the proposed commission.

NATIONAL ACADEMY OF SCIENCES

2101 CONSTITUTION AVENUE WASHINGTON, D. C. 20418

OFFICE OF THE PRESIDENT

March 27, 1984

The Honorable James H. Scheuer
Chairman, Subcommittee on Natural Resources,
Agriculture Research and Environment
Committee on Science and Technology
U.S. House of Representatives
Washington, D. C. 20515

Dear Mr. Scheuer:

Thank you for the opportunity to comment on your draft bill, entitled "Environmental Monitoring Improvement Act of 1984." The bill addresses the important and multi-faceted needs for environmental monitoring that face our society. Recent experiences with widely dispersed pollutants, such as acid rain and ethylene dibromide, underscore the diversity of environmental monitoring needs and the necessity of establishing priorities for collecting such data.

Your inquiry is especially timely as environmental monitoring was a subject of discussion at a recent meeting of our Environmental Studies Board. I understand that two of our Board members, J. Clarence Davies and John Farrington, will be among the witnesses at your March 28 hearings. Our Board agreed that the national environmental monitoring program is in critical need of further attention. The establishment of a National Commission on Environmental Monitoring could serve to focus public attention on the issue and thereby promote action on recommendations made in a variety of existing reports.

Several fundamental technical issues should be addressed in your deliberations on this proposed measure. The first is the need to ensure that environmental parameters included in monitoring programs are systematically identified, and periodically refined. In so doing, attention must be directed to regulatory and research program needs, technical

capability, and the value of assuring compatibility with historical data on environmental quality indicators. Once the parameters to be monitored are identified, the second basic set becomes how to determine efficient means for monitoring. Finally, the uses of the data must be taken into account. In particular, there is a need to link environmental and public health data on a timely basis.

Section 3 of the bill calls for an environmental monitoring report which would be a useful compendium of national and international monitoring programs. The section also calls for an evaluation of the effectiveness of monitoring program activities, with special attention on data quality and compatibility. By any measure of experience, assessing the effectiveness of such programs is very complex and inherently subjective.

The membership of the Commission established in Section 4 might appropriately include representatives of the U.S. Departments of Agriculture, Interior, and Defense. Under Section 4(b) the National Academy of Sciences would be asked to provide a list of nominees "representing" certain civic, private, and scientific institutions. In undertaking this task, we believe there should be some language clarification in the term "representing," as used in Section 4(b). We view this as being important to assure that the selection process emphasizes technical competence, and knowledge and experience with government. It also should reflect balance among scientific disciplines. The suggested modification, as shown on p. 6, line 15 (see attached), would accomplish the purposes we have in mind.

The laudable goal of the bill is to improve the effectiveness of national and international monitoring efforts. Considerable positive monitoring activity is under way within the Federal Executive branch resulting from earlier statutory mandates and expression of Congressional interest (including hearings conducted

by your subcommittee). Several projects within the Academies' National Research Council also have augmented support of these Federal monitoring programs and new projects are to be initiated in a number of program areas. It would be unfortunate if the deliberations of the National Commission were to divert or postpone the investment of resources in these monitoring activities for which a need has been established. Indeed, the most beneficial allocation of new public investments on environmental monitoring is a matter which the Congress will undoubtedly carefully consider.

Thank you for the opportunity to share these views with the subcommittee. Please do not hesitate to call upon the Academy again if we can be of further assistance to you in addressing this important topic.

Yours sincerely,

Frank Press
President

Attachment

a plan to improve environmental monitoring; and

(2) advise and assist in the preparation of the first Environmental Monitoring Report, in cooperation with the Administrator of the Environmental Protection Agency, as required by section 3 of this Act.

(b) Such Commission shall be composed of fifteen members, including the Chairman of the Council on Environmental Quality, the Administrators of the Environmental Protection Agency and of the National Oceanic and Atmospheric Administration, the Director of the National Institutes of Health, of the National Bureau of Standards, and of the United States Geological Survey; and nine members selected by the President from a list of at least 15 nominees chosen by the National Academy of Sciences ~~and~~ Insert: for their professional and scientific competence from among such ~~representing~~ State and local governments; regional and groups as international commissions; industry; scientific and academic experts; and environmental, conservation and health groups. The Chairman of the Commission shall be elected by the Commission from among its members.

(c) The Commission shall, not later than three years after the date of enactment of this Act, submit a report as described by section 5 to the Congress and the President of the results of its investigation and study, together with recommendations for improvements in national environmental monitoring and United States participation in international

OHIO RIVER VALLEY
WATER SANITATION COMMISSION
414 WALNUT STREET, CINCINNATI, OHIO 45202 (513) 421-1151

FRANK C CAMPBELL
CHAIRMAN
LEO WEAVER
EXECUTIVE DIRECTOR
AND CHIEF ENGINEER

March 26, 1984

The Honorable James H. Scheuer,
Chairman,
Subcommittee on Natural Resources
Agriculture Research and Environment
Suite 2321, Rayburn House Office Building
Washington, D.C. 20515

RECEIVED
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OFFICE
WASHINGTON, D.C.

Dear Mr. Scheuer:

I appreciate your invitation to appear as a witness at the legislative hearing on the proposed Environmental Monitoring Act. On May 26, 1983, I appeared before the sub-committee as Chairman of the Ohio River Valley Water Sanitation Commission (ORSANCO); Leo Weaver, Executive Director of the Commission, accompanied me.

While personal considerations preclude my appearance at this time, the opportunity to comment on the proposed act is certainly welcome. I do so as a member of the Commission from Ohio and as former Director of Utilities for the City of Portsmouth, Ohio, which is bounded by the Ohio River and one of its major tributaries, the Scioto. For your records, I am currently employed as a senior engineer by the Goodyear Atomic Corporation, Piketon, Ohio.

Last May, my testimony described the Ohio River Valley Water Sanitation Commission and its monitoring programs. As a follow-up, I responded to several questions posed by the subcommittee concerning deposition of the data collected by the Commission and its utilization. I believe the proposed environmental monitoring improvement act of 1984 is responsive to the previously described input and I am pleased to support it.

The proposed Act recognizes the need for more economical and efficient use of resources to gain more and better information to manage the environment. It recognizes the need for a multi-agency and a multi-media approach to achieve this goal. The latter goal is particularly challenging; there has been limited effort indeed; even in recent years, to achieve progress toward this goal.

In supporting the proposed act, I would be remiss if I did not again emphasize the necessity of considering environmental monitoring on a regional, "problem-shed" basis. This has been the foundation of the systems and accomplishments of ORSANCO. As a utilities director of a river city, I observed the benefits we received from upstream intelligence and the more effective planning and operation resulting from it. The same effect was noted by downstream cities which received and utilized data and information we provided in turn.

There is one other factor that I would emphasize. ORSANCO's success in the field of monitoring and surveillance was enabled by its regional jurisdiction and authority; this success emanated not from policies, plans and operations carried out solely by a commission staff, although staff played a vital role. Ultimately the success can be ascribed to the participation of those affected and concerned in government and industry, and by the public, including environmental conservation, recreation and health interests. Not only was this participation evident in the planning phases but most significantly in the actual operation and ultimately therefore, in the accountability for the operations' success or failure.

Again, I believe the proposed act as structured will enable the above to be considered on its merits. And the act adds the vital additional dimensions of multi-media and international perspectives. I would hope the Congress would move forthrightly in the enactment of this measure.

Sincerely,

Lloyd N. Clausing
Commissioner

WOODS HOLE OCEANOGRAPHIC INSTITUTION
Woods Hole, Massachusetts 02543
Phone (617) 548-1400

Coastal Research Center

27 March 1984

Honorable James H. Scheuer
Chairman
Subcommittee on Natural Resources,
Agriculture Research and Environment
Committee on Science and Technology
U.S. House of Representatives
House Annex #2, Room 388
Washington, D. C. 20515

Dear Mr. Scheuer:

Thank you for the opportunity to comment on the Environmental Monitoring Improvement Act of 1984 (revised bill). I regret that I am unable to attend the hearings on 28 March 1984 because of the research my laboratory is currently pursuing in the area of environmental assessment, much of which we hope will contribute to more useful monitoring.

Most of my thoughts and recommendations in regard to monitoring were conveyed during my testimony of 26 May 1983 before your subcommittee.

In regard to the present bill before your subcommittee, I offer the following recommendations and observations:

1) The bill seems to offer the best means of elucidating policies, or lack thereof, for environmental monitoring at local, state, regional, national and international levels.

Ideally, the current federal government structure via EPA, DoE, NOAA, Department of Agriculture coordinated by the Council for Environmental Quality could conduct such an assessment with less hassle and money. However, your hearings have elicited testimony that such an approach will not take place. Thus, a National Environmental Monitoring Commission seems to be the answer.

2) Long term monitoring data is vitally needed for issues such as the carbon dioxide-climate-sea level rise problem, acid rain, and environmental burdens of hazardous chemicals. The collection of this data should be subjected to minimal fluctuations due to the periodicity of national election cycles and the Commission should explore the means to ensure this. Although I am not as familiar with the administrative mechanisms, it seems that an analogy to certain types of economic data gathering and interpretation is appropriate.

3) The differing needs of local, state, regional, national, and international environmental monitoring will give rise to some redundancy and overlap on data collection. This should not be construed as inefficiency in each case,

because planned redundancy in certain key measurements should be part of a monitoring effort. The Commission should explore this issue.

4) P. 3, line 6, item (6) states that "in recent years no significant progress has been made towards correcting the many problems in environmental monitoring." With due respect to the subcommittee and its staff, I think this is an overstatement. I readily admit a bias as a scientist who has been working in the general area of environmental research and monitoring. However, I think there has been demonstrable progress over the past five years in: (i) quality assurance of the validity of data for several toxic chemicals in various segments of the environment, (ii) continuing long term measurements of CO_2 in the atmosphere and oceans, (iii) more extensive and higher quality data in acid rain assessment, (iv) development and application of remote sensing of soil, crop, watershed, and forest parameters, and (v) monitoring of toxic or potentially harmful chemicals in food by The Food and Drug Administration which provides indirect assessment of environmental burdens of chemicals of concern. These are only a few examples of progress and certainly there should have been much more progress as your hearings brought forth.

5) The United States participation or non-participation in international programs pertaining to environmental quality research and monitoring is poorly coordinated as noted in your bill. I hope that the Commission carefully examines the extent to which Department of State coordinates with other federal agencies and departments in this arena. While environmental quality is only a small part of the array of information impacting foreign policy, there are signs that the interconnective nature of environmental quality, food resources, trade, and the economy may be more closely linked during the next several decades. As an example, the recent EDB (ethylene dibromide) deliberations have revealed that export of certain food to Japan was influenced by EDB contamination in the United States. There are several other examples the Commission could explore.

6) I reiterate a main point of my testimony of 26 May 1983 of the necessity of close links between environmental research and environmental monitoring. Monitoring data is expensive to collect but is useless without proper and useful interpretation. The state of the art in measurements and important problem areas will pass by the monitoring programs in the course of a few years unless monitoring is closely coupled with research and can be modified as new information becomes available.

7) Data archiving in a useful form will not be a trivial problem.

A nagging thought which has bothered me in thinking about the above concerns our ability in the private, public, and academic sectors to make use of some environmental quality data. I am thinking specifically of the need to enhance efforts to formulate clearly understood risk assessment procedures of use to both the private and public sectors. While there has been increased emphasis on this problem in EPA and other agencies, the Commission should consider the interactions between risk assessment procedures and monitoring.

In summary, I think the scientific and engineering communities can provide the necessary technical and scientific inputs to greatly enhance the effectiveness and utility of monitoring, once the policy issues are sorted out by the Commission's study.

If I can be of further assistance to you, your Committee or staff, please call on me.

Sincerely,

John W. Farrington

John W. Farrington
Senior Scientist
Dept. of Chemistry
and
Director, Coastal
Research Center

JWF:pac

United States Synthetic Fuels Corporation
2121 K Street, N.W. Washington, District of Columbia 20586 Telephone: (202) 822-6600

April 20, 1984

The Honorable James H. Scheuer
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Scheuer:

It has come to my attention that you are planning to introduce legislation to establish a commission to develop a plan to improve the environmental monitoring programs of government agencies, private industry, and universities. I thought you might be interested in a brief description of the activities of the U.S. Synthetic Fuels Corporation (the "Corporation") regarding the environmental monitoring of synthetic fuels projects receiving financial assistance from the Corporation.

The Energy Security Act, which created the Corporation, requires that each project sponsor receiving financial assistance develop, in consultation with EPA, DOE, and appropriate state agencies, an Environmental Monitoring Plan acceptable to the Corporation's Board of Directors (see Section 131(e)). Pursuant to this Plan, the project sponsor will perform a broad range of monitoring activities related to potential environmental and health impacts of its project. Monitoring activities will include compliance monitoring, which is determined by the project's permit and other regulatory requirements, and what we refer to as "supplemental monitoring." Supplemental monitoring will be performed by a project sponsor when it can produce environmental and health data relevant to the replication of synthetic fuels projects where such data are not otherwise provided by compliance monitoring, for example, the identification and characterization of certain unregulated substances being emitted and the assessment of certain occupational exposures. The objective of the monitoring plan is to thoroughly characterize the environmental emissions of each facility, to assess any impacts on workers, and to study related matters in order to lay a sound environmental foundation for an expanded synthetic fuels industry.

For each project, the Corporation will establish a Monitoring Review Committee, consisting of representatives of the project sponsor, the federal and state consulting agencies, and the Corporation. The Committee will meet at least once every year to review the sponsor's environmental and health monitoring information to determine if there are any trends of environmental or health concern. The Committee may also recommend modifications to the sponsor's monitoring requirements where the data indicate that a change would be appropriate. Thus, in the review of monitoring data as well as in the initial development of the monitoring plans, a mechanism exists for coordinating all monitoring activities with key federal and state agencies. Moreover, we have attempted to obtain input from other agencies, such as the Department of Interior and National Institute of Occupational Safety and Health (NIOSH) on specific matters within their expertise or jurisdiction. We are extremely pleased with the well-coordinated efforts to date.

I am enclosing a copy of the Corporation's Environmental Monitoring Guidelines, which provide a detailed statement of our policy and procedures in this area. If you would like any additional information, please feel free to contact Steven Gottlieb, the Corporation's Director of Environment, or me.

Sincerely,

Edward E. Noble
Chairman of the Board

Enclosure

cc: Milt Russell, U.S. EPA
Jan Mares, U.S. DOE
A. Alan Hill, U.S. Council on Environmental Quality

SYNTHETIC FUELS CORPORATION

Final Environmental Monitoring Plan Guidelines

Note: This reprint incorporates two substantive corrections that were published in the Federal Register of November 22, 1983. It also reflects corrections of several typographical errors.

AGENCY: U.S. Synthetic Fuels Corporation.

ACTION: Publication of Final Environmental Monitoring Guidelines.

SUMMARY: This notice publishes the Environmental Monitoring Plan Guidelines (the "Guidelines") which were adopted in final form on July 28, 1983, by the Board of Directors of the U.S. Synthetic Fuels Corporation to carry out the requirements of Section 131(e) of the Energy Security Act, Pub. L. 96–294, relating to environmental monitoring. Interim Final Guidelines were published in the Federal Register on April 1, 1983 [48 FR 14108–14113] and public comments were solicited at that time. Comments were received from industry; federal, state, and local agencies; Congress; and others.

EFFECTIVE DATE: July 28, 1983.

FOR FURTHER INFORMATION CONTACT: Steven M. Gottlieb, Director of Environment, U.S. Synthetic Fuels Corporation, 2121 K Street, NW., Washington, D.C. 20586, (202) 822–6316.

For Copies of the Guidelines: Catherine McMillan, Director of Public Disclosure, U.S. Synthetic Fuels Corporation, 2121 K Street, NW., Washington, D.C. 20586, (202) 822–6460.

SUPPLEMENTARY INFORMATION:

A. Background

Section 131(e) of the Energy Security Act (Pub. L. 96–294, 42 U.S.C. 8701, 8731) specifies that a Project Sponsor or Sponsors receiving financial assistance from the United States Synthetic Fuels Corporation (the "Corporation") shall develop, in consultation with the Environmental Protection Agency ("EPA"), the Department of Energy ("DOE"), and appropriate state agencies ("Consulting Agencies"), an Environmental Monitoring Plan ("Plan") acceptable to the Corporation's Board of Directors. These Guidelines set forth the procedural steps to be taken and the broad substantive areas to be addressed in development of such Plans and the Environmental Monitoring Plan Outlines ("Outlines") upon which they are based.

The following section (Section B) discusses the major comments received by the Corporation on its Interim Final Guidelines and the Corporation's responses thereto. Section C describes revisions made to the Interim Final Guidelines by the Corporation based on its own review, i.e., not in response to specific comments received. To the

extant practical, the changes discussed in each of these two sections are presented in the order in which they occur in the Guidelines.

B. Comments Received and Corporation Response

1. *Monitoring required by the Corporation is redundant to regulatory requirements.* New language has been added to Sections IV and VII.B of the Guidelines to clarify that the Corporation does not seek to impose redundant monitoring requirements on the Sponsor. Section IV of the Guidelines has been amended to emphasize that the purposes for including Compliance Monitoring in Outlines and Plans are to enable the Corporation to obtain copies of the monitoring data already being generated pursuant to a Project's permits and other governmental approvals as well as to provide the basis for determining the appropriate scope of Supplemental Monitoring (i.e., monitoring specified in an Outline or Plan which is not required by federal, state, and local permits, approvals, and other regulatory obligations). Language added to Section VII.B further emphasizes that the Corporation does not require any monitoring activities that are redundant to those required by a Project's permits, approvals, or other regulatory obligations.

2. *Monitoring of socioeconomic and water-use impacts should be required as part of the Monitoring Outlines and Plans.* The Corporation has not amended the Guidelines in response to this concern other than to incorporate a minor language change in Section IV to clarify the Corporation's previously stated intention not to require such monitoring in Outlines and Plans but rather to require such monitoring in appropriate cases as part of the Financial Assistance Agreement. The language in Section 131(e) which refers to the "monitoring of environmental and health-related emissions" does not appear to contemplate that socioeconomic and water consumption monitoring would be required pursuant to this provision, and therefore such monitoring is not included in the Guidelines. However, other provisions of the Energy Security Act (particularly Section 131(b)) provide the Corporation with the authority to require such monitoring outside of the Section 131(e) environmental monitoring process. The Corporation recognizes the importance of such monitoring and will require, by specific terms of the Financial Assistance Agreements, that the Project Sponsor perform socioeconomic and water consumption monitoring in appropriate cases to determine Project-related impacts in these areas. While a formal consultation process between the Sponsor and the Consulting Agencies on these matters is not contemplated by statute, the Corporation intends to consult informally with appropriate agency officials on the scope of these monitoring requirements.

3. *An adequate description of the acceptability criteria is not provided.* The Guidelines have been amended to include the specific criteria by which an Outline or a Plan will be judged by the Corporation to be acceptable or not acceptable (Section VI). These criteria provide specificity to both the Project Sponsor and Consulting Agencies regarding those items which must be included in acceptable Outlines and Plans.

4. *The Corporation and the Consulting Agencies—or, alternatively, the Sponsor—should have the burden of justifying the need to monitor specific unregulated substances and of providing threshold values above which these substances must be monitored.* No amendment has been made in the Guidelines with regard to assigning a burden to any of the parties involved in developing an Outline or Plan requiring them to justify the need for specific monitoring relating to unregulated substances. The Corporation expects that during the consultation process the Project Sponsor and Consulting Agencies will provide justification to one another for proposing to include or exclude specific monitoring activities or protocols in an Outline or Plan. Ordinarily, these exchanges will be sufficient to enable the Sponsor and Consulting Agencies to resolve most issues among themselves. Where disagreement remains, the Corporation will, based on the justification provided, review the merits of each party's opinion as part of its acceptability review of an Outline or Plan. The Corporation feels that this procedure is sufficient to establish sound monitoring Outlines and Plans without assigning a formal "burden" to any of the parties to the process.

5. *Site-specific monitoring which is not applicable to replication should be required.* No change has been made in the Guidelines' requirements that site-specific monitoring be considered where it would yield information relevant to replication (Section VII.C). Language was added to Section VII.D.4 to clarify that replication refers to development of synthetic fuels plants in the same vicinity or in similar settings. It should be noted that the exemption from site-specific monitoring provided for by the Guidelines is a limited one for two reasons: (1) Site-specific monitoring will often have applicability to project replication for future facilities located in the same area or similar environmental settings and, therefore, would be appropriate as part of the Sponsor's Supplemental Monitoring program, and (2) site-specific monitoring is often required by permit, federal lease, or other requirements, and, therefore, would be included in the Compliance Monitoring section of the Sponsor's Environmental Monitoring Plan.

6. *The monitoring of unit operations for which emissions have been well characterized should not be required.* The Guidelines have been amended (Section VII.C) so that monitoring of emissions will not be required for those unit operations (e.g., certain coal preparation operations) which are common to other industries and for which comprehensive emissions data (including data on unregulated substances of environmental or health concern) are available. Where a substantial emissions data base already exists, further monitoring would be redundant.

7. *Monitoring of wastes disposed of off-site should be required.* The Guidelines have been amended to require Sponsors to monitor solid or hazardous wastes to be shipped off-site when the receivers of such wastes are not required to monitor them (Section VII.D.1). This avoids the situation where potentially hazardous synthetic fuels wastes would not be monitored either at the generating or the receiving end, as would occur in the case of certain synthetic fuels wastes which are presently exempted from hazardous waste regulations under the Resource Conservation and Recovery Act.

8. *A common Worker Registry format should be required or, alternatively, Sponsors should be permitted to develop their own formats.* The Guidelines have been amended to direct the Sponsor to work with the Consulting Agencies to promote a common Worker Registry format (Section VII.D.3). (DOE, in particular, will focus on matters relating to Worker Registries.) A common Worker Registry format would allow the data in the Worker Registries of several Sponsors to be consolidated easily, thus increasing the size of the data base and improving the statistical validity of epidemiological studies utilizing the data. In addition, the Guidelines also direct the Sponsor to maintain the Worker Registry for the life of the Project because it is essential that occupational health and safety data be collected and maintained over a period

of time sufficient to assess the chronic, as well as the acute, occupational health and safety impacts resulting from the construction and operation of synthetic fuels facilities.

9. *The reporting requirements are excessive.* The Guidelines (Section IX) eliminate the requirement for monthly monitoring reports. Requiring monthly reports would place an unreasonable burden on the Sponsor relative to the value of obtaining data on a monthly basis. The data summaries required in the Sponsor's quarterly reports will provide sufficient detail for developing the Corporation's information base. In any event, the Corporation will retain the right of access (through terms of the Financial Assistance Agreement) to the Sponsor's raw monitoring data should the need arise to review these data. The Guidelines (Section IX) also eliminate the requirement for analysis of data in quarterly reports, because the amount of monitoring data generated during each quarter generally would not be sufficient to provide the basis for meaningful statistical analyses of trends and patterns. Data analyses continue to be required in annual reports.

10. *Supplemental Monitoring data should be treated as confidential information or, alternatively, Supplemental Monitoring data should be publicly available.* No amendment has been made in the Guidelines' requirements that monitoring information will be made available as authorized by law and that public information requests will be handled in accordance with the Corporation's Guidelines on Disclosure and Confidentiality. Several points are relevant to the comments received. The monitoring information submitted to the Corporation will primarily relate to emissions and ordinarily is not considered to be confidential because it generally cannot be used, absent other data, to deduce proprietary process information. In addition, most monitoring information will be presented in the form of summaries and analyses, which removes it an additional step from compromising proprietary process information. With regard to the specific case of data from the monitoring of environmental control systems which may be considered proprietary, a footnote has been added (Footnote 9) which provides for submission of non-proprietary summaries.

The Guidelines have been amended to require that a Sponsor's Environmental Monitoring Plan identify those types of information that are expected to be proprietary and those that are not (Section X). To facilitate release of non-confidential information, the Corporation will work with each Sponsor to determine, in advance of submission of information, generic areas of information to be generated during monitoring that should not be treated as confidential. Advance determinations will not require Sponsors to make information publicly available which is properly designated confidential; further, a stamp of "confidential" in accordance with an advance determination will not restrict the Corporation from reviewing the appropriateness of any claim of confidentiality in accordance with its "Guidelines on Disclosure and Confidentiality." Where information is properly designated as confidential, the Corporation may, where appropriate, encourage a Sponsor to make information available to interested agencies upon conditions acceptable to the Sponsor.

The Corporation anticipates that most monitoring information can be made available to the Consulting Agencies and, as appropriate, to other interested agencies without requiring a separate formal request to the Corporation to receive each data submittal made by a Sponsor. The public will have access to non-confidential information through minutes of Monitoring Review Committee meetings, quarterly reports, annual reports, and requests for information made under Section 121 of the Energy Security Act.

11. *Interested citizens and agencies other than the Consulting Agencies do not have opportunities to provide meaningful input to (1) the development of Environmental Monitoring Outlines and Plans, and (2) the review of data generated by monitoring activities.* No revisions to the Guidelines were deemed necessary to address this comment. The Corporation makes all Outlines and Plans (including drafts) and Consulting Agency comments publicly available through the Corporation's Public Reading Room (Section X), and encourages state Consulting Agencies to make Outlines and Plans available locally (Footnote 10). The public may comment at any time on these documents. With regard to input by agencies not designated as Consulting Agencies (Section 131(e) designates EPA, DOE, and the appropriate state agencies as the Corporation's sole Consulting Agencies), the Guidelines do not provide for project-specific consultation from other agencies. However, the Corporation has sought, and will continue to seek, input by agencies not designated as Consulting Agencies regarding generic issues, i.e., those which are not specific to any particular Outline or Plan. Also, such agencies can provide (and in some cases already have provided) input relating to project-specific matters to the Consulting Agencies.

The formal mechanism for review of monitoring data and developing recommendations for modification of Monitoring Plans is the Monitoring Review Committee, which is comprised of representatives of the Sponsor, the Consulting Agencies, and the Corporation (Section XI). Other agencies and the public can review such data through access to quarterly and annual monitoring reports and minutes of the Monitoring Review Committee meetings. Further, other agencies and the public may submit comments on any aspect of a Project's monitoring activities.

12. *Supplemental monitoring should be limited by a cost ceiling or a time limitation.* The Guidelines were not amended to require a cost ceiling for Supplemental Monitoring because the Corporation feels that in order for Supplemental Monitoring activities to be scientifically sound they should be developed independent of the constraints of such a ceiling. Also, no single method or formula for setting a cost ceiling could properly be applied to all Projects, since the proper level of Supplemental Monitoring required for Projects will vary according to their processes, feedstocks, control technologies, etc., as they relate to potential environmental concerns. Additionally, the Corporation does not believe that fixing a cost ceiling for Supplemental Monitoring is essential because once Outlines and Plans are found acceptable by the Corporation, the scope of the Supplemental Monitoring programs, including specific monitoring tasks, monitoring frequencies, and duration of monitoring, is defined. Furthermore, the offset provision of the Guidelines (Section XI.B.2), which limits the extent of Supplemental Monitoring under normal circumstances to that specified in the Plan, will prevent increases in Supplemental Monitoring costs (see following section).

While no costs ceilings will be imposed, the Guidelines continue to provide that the Corporation will consider the costs to the Sponsor of Supplemental Monitoring relative to its potential benefits as part of its determination of acceptability of both Outlines and Plans (Section VI). However, any explicit cost/benefit approach to setting a cost ceiling would not be practical because the benefits of

each Supplemental Monitoring task cannot readily be quantified, particularly prior to evaluating the results of its implementation.

With respect to imposing a time limitation on Supplemental Monitoring, one of the acceptability criteria added to the Guidelines (Section VI) indicates that Supplemental Monitoring should continue only as long as necessary to produce a statistically sound body of data. The Corporation's intention is that Supplemental Monitoring is not necessarily required for the entire life of a Project, but rather should be continued until consistency in trends and patterns in the Project's emissions can be established with a high degree of certainty. (This does not apply to worker exposure monitoring, medical surveillance, or maintenance of Worker Registries since long-term monitoring, i.e., for the life of the Project, is necessary for meaningful characterization of occupational health and safety impacts.) The Guidelines were amended (Section V.B) to direct the Sponsor to state the approximate duration of each monitoring task in the Outline, and to provide more specific details on duration in the Plan. The duration specified in the Plan can be subsequently modified, as appropriate, to achieve the statistically sound body of data referred to in the Guidelines.

13. *The offset provision is scientifically unsound.* The Guidelines have not been amended with respect to the basic approach of the "offset provision" (Section XI.B.2) which states that under normal circumstances the Corporation will not require Supplemental Monitoring beyond that specified in the Plan unless the costs of the additional requirements have been, or are being, offset by the elimination of comparable costs. (The Guidelines' offset provision applies only to Supplemental Monitoring; the Corporation will not, and indeed cannot, authorize any changes to a Sponsor's Compliance Monitoring tasks.) A minor revision was added in the form of a footnote (Footnote 12) which specifies that offsets will not apply when monitoring tasks are modified or added because of changes in production, process, pollution control, or feedstock.

In the Corporation's view, the fundamental reason that "new" Supplemental Monitoring should not be required without a comparable reduction in existing Supplemental Monitoring requirements is to assure the Sponsor that it will not be subject to the prospect of an ever increasing monitoring burden. Moreover, this approach will ensure that a Sponsor's monitoring focuses on those areas of greater health or environmental concern. It is anticipated that over time some Supplemental Monitoring activities will, in relative terms, be of diminishing importance and can be eliminated or reduced in frequency when important new monitoring activities are deemed necessary. In the event that *all* monitoring activities appear to be essential and none should be eliminated or reduced in frequency—a situation which the Corporation does not "normally" expect to find—important Supplemental Monitoring activities can still be added to a Sponsor's monitoring program because the Guidelines give the Corporation the flexibility not to provide for comparable reductions where appropriate.

14. *Proper maintenance of the Sponsors' monitoring programs is not assured after termination of the Corporation.* The Energy Security Act directs the U.S. Department of Treasury to carry out the Corporation's function after termination of the Corporation.

C. Other Revisions to the Guidelines

The Corporation has made a number of additional revisions to the Guidelines based on its experience in implementing the Interim Final Guidelines and not in response to any particular comments received.

1. *Soil Monitoring.* The Corporation has amended the Guidelines to clarify and limit soil monitoring requirements (Section VII.D.2) so as not to require the Sponsor to monitor soil when no contamination has actually taken place. Soil monitoring, other than that required by permit, is required only when unregulated substances which have the potential to contaminate soil actually come into contact with it (as in the case of a product spill) and have a reasonable likelihood of being present in concentrations of environmental or health concern.

2. *Toxicological Testing.* The Guidelines no longer require that toxicological testing be considered by the Sponsor. This change was made because: (1) Toxicological testing is often open ended and could represent an unreasonable cost burden relative to other parts of the monitoring program; and (2) such testing is in the nature of a research and development function which is more appropriately addressed by federal agencies and research institutions.

3. *Other Supplemental Monitoring.* The Guidelines have been amended to provide that certain types of Supplemental Monitoring, such as ecological monitoring and monitoring of public nuisances (e.g., noise and odor), are not required except where source emissions data and other information indicate there is reason to believe that the Project could cause significant impacts in these areas (Section VII.D.4). The Sponsor is required only to indicate its commitment, in both the Outline and Plan, to perform such monitoring when circumstances warrant, as determined by the Sponsor or the Monitoring Review Committee. Requiring such monitoring when there is no indication of a potential problem would be inappropriate and burdensome.

4. *Monitoring Review Committee.* Two amendments were made to the Guidelines to ensure the timeliness of action of the Monitoring Review Committee and proper documentation of its meetings. First, the Monitoring Review Committee shall meet shortly after the issuance of the annual monitoring report by the Sponsor (Section XI.A). Second, minutes of each Committee meeting will be prepared by the Corporation (Section XI.B.1).

5. *Clarity.* The Corporation has added a definitions section and made numerous organizational and editorial changes to the Guidelines to improve their clarity. Also, specific acceptability criteria have been added (Section VI) to define the basis on which the Corporation's acceptability determinations will be made. Overall, all of the changes made, whether in response to comments or otherwise, have been designed to set forth a clear basis by which the Sponsor can achieve a sound monitoring program.

United States Synthetic Fuels Corporation Environmental Monitoring Plan Guidelines

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I. Purpose

Section 131(e) of the Energy Security Act (Pub. L. 96-294, 42 U.S.C. 8701, 8731) specifies that a Project Sponsor or Sponsors receiving financial assistance from the United States Synthetic Fuels Corporation (the "Corporation") shall develop, in consultation with the Environmental Protection Agency ("EPA"), the Department of Energy ("DOE"), and appropriate state agencies, an Environmental Monitoring Plan acceptable to the Corporation's Board of Directors. In implementing this statutory mandate, the Corporation is utilizing a two-stage approach under which the Sponsor: (1) Develops an *Outline* of its Environmental Monitoring Plan, which will be incorporated into the Financial Assistance Agreement, and (2) develops an Environmental Monitoring *Plan* (based on the Outline) after the Financial Assistance Agreement is executed.

The purpose of these Guidelines is to set forth the procedural steps to be taken and the broad substantive areas to be addressed in developing Outlines and Plans. The Guidelines provide the basis on which the Corporation will determine the acceptability of Outlines and Plans. However, the Guidelines do not specify the substantive details required for an acceptable Outline or Plan since the actual development of an Outline and Plan is the responsibility of the Sponsor, in consultation with the appropriate agencies, and their contents will depend, in part, on project-specific factors.

II. Statutory Basis

Section 131(e) of the Energy Security Act requires that:

> Any contract for financial assistance shall require the development of a plan, acceptable to the Board of Directors, for the monitoring of environmental and health-related emissions from the construction and operation of the synthetic fuels project. Such plan shall be developed by the recipient of financial assistance after consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, and appropriate state agencies.

The Conference Committee's Joint Explanatory Statement relating to this provision states, in pertinent part:

> the monitoring of emissions—gaseous, liquid or solid—and the examination of waste problems, worker health issues and other research efforts associated with any synthetic fuels project * * * will help to characterize and identify areas of concern and develop an information base for the mitigation of problems associated with the replication of synthetic fuels projects. The Corporation is not expected to involve itself in the development or execution of such plans except for the necessary approval. The conferees intend that development of the plans and actual data collection be reserved to the applicants for financial assistance after consultation with appropriate federal and state agencies. (Joint Explanatory Statement of the Committee of Conference: pp. 208-209 of Compilation of the Energy Security Act of 1980.)

III. Definitions

A. *Ambient Monitoring:* Monitoring of substances found (or projected to be found) in a project's emissions and discharges in the unconfined environment, including the air, water, and land in the vicinity of the Project.

B. *Comparable Permit:* A permit for a similar synthetic fuels facility or process, or an analogous facility or process in a non-synthetic fuels industry.

C. *Compliance Monitoring:* Environmental and health monitoring required by federal, state, and local permits, approvals, and other regulatory obligations, including (1) monitoring specified in any federal or state environmental impact statement or agency record of decision relating thereto, and (2) monitoring pursuant to federal or state lease requirements.

D. *Consulting Agencies:* The Administrator of the Environmental Protection Agency, the Secretary of Energy, and appropriate state agencies. The Administrator, the Secretary, and the Governor of the state in which the Project is located each designate a representative to perform the function of the respective Consulting Agency.

E. *(The) Corporation:* The United States Synthetic Fuels Corporation.

F. *Environmental Monitoring Outline (or Outline):* A summary of a Sponsor's monitoring obligations, as described in Section V.B.

G. *Environmental Monitoring Plan (or Plan):* A detailed description of a Sponsor's monitoring obligations, as described in Section V.B.

H. *Financial Assistance Agreement:* An agreement between the Corporation and the Sponsor providing for loans, loan guarantees, price guarantees, or joint venture assistance or a combination thereof.

I. *(The) Guidelines:* The Environmental Monitoring Plan Guidelines of the United States Synthetic Fuels Corporation

J. *Project:* Facilities for the production of synthetic fuels as described in the Financial Assistance Agreement and any dedicated mining operation at the Project site which is wholly or principally controlled by the Sponsor.

K. *Quality Assurance/Quality Control:* Activities and procedures designed to ensure that all information, data, and analyses resulting from monitoring are technically valid, accurate, precise, and reliable.

L. *Source Monitoring:* Monitoring of air emissions, water effluents, and solid wastes which are released from a Project's vents, stacks, pipes, etc., as well as the monitoring of fugitive air emissions from Project-related activity.

M. *Sponsor:* The entity or entities seeking financial assistance for a Project from the Corporation.

N. *Supplemental Monitoring:* Monitoring specified in an Outline or Plan which is not required by Compliance Monitoring.

O. *Worker Registry (or Registry):* A record-keeping system which integrates different types of occupational health and safety information, including worker exposure data, medical records, demographic data, and job classification.

IV. General Approach to Implementing Section 131(e)

The Corporation views the identification and characterization of areas of concern and the development of an information base for the mitigation of problems associated with the replication of synthetic fuels projects to be the fundamental purpose of environmental and health monitoring pursuant to Environmental Monitoring Plans under Section 131(e). Toward this end, the Corporation requires that the Sponsor perform a broad range of monitoring activities related to potential environmental and health impacts of its Project. While socioeconomic and water consumption monitoring are not required pursuant to Section 131(e) (which addresses environmental and health-related emissions), such monitoring will be required, as appropriate, by separate terms of a Project's Financial Assistance Agreement.

Environmental monitoring pursuant to Section 131(e) shall include Compliance Monitoring and, as appropriate, Supplemental Monitoring. Compliance Monitoring, whose fundamental purpose is to fulfill the Sponsor's regulatory obligations, is included as part of Section 131(e) environmental monitoring because the results of such monitoring are necessary both to provide the Corporation with a broad information base that is relevant to replication of

synthetic fuels projects and to provide the basis for evaluating the proper scope of Supplemental Monitoring. Each Sponsor should perform Supplemental Monitoring to provide information not provided by Compliance Monitoring, such as the types and amounts of certain unregulated substances emitted from a synthetic fuel plant.[1] The Sponsor should integrate Compliance and Supplemental Monitoring activities to create a sound monitoring program during the life cycle of the synthetic fuels Project.

The Corporation requires that the Environmental Monitoring Plan be developed in two stages. During the first stage, the Sponsor is required to develop an Environmental Monitoring Outline in consultation with the Consulting Agencies. This Outline, which should contain a general description of the Sponsor's monitoring tasks, must be found acceptable by the Corporation and, for those Projects receiving financial assistance, will be incorporated into the Financial Assistance Agreement. During the second stage, the Sponsor is required, by a date to be fixed in the Financial Assistance Agreement, to develop an Environmental Monitoring Plan in consultation with the Consulting Agencies. This Plan should contain a detailed description, based upon the terms of the Outline, of the specific monitoring tasks to be undertaken in connection with the Project and must also be found acceptable by the Corporation.

V. Developing Environmental Monitoring Outlines and Plans

A. General

To promote the timely development of sound Environmental Monitoring Outlines and Plans, with meaningful input from the Consulting Agencies, the procedural approach set forth below should be used in developing and reviewing Environmental Monitoring Outlines and Plans. In implementing these procedures, several general points relating to the consultation process should be made:

- While the Corporation has the ultimate statutory responsibility for making acceptability determinations, the Corporation regards the Consulting Agencies' opinions and comments as fundamental to the development of an acceptable Outline and Plan.[2]
- Early meetings between the Sponsor and Consulting Agencies, and communications between them throughout the process of developing an Outline and Plan, are inherent to the Section 131(e) consultation process. At the same time, the Sponsor should bear in mind that it has the responsibility for developing its Outline and Plan and it should not unduly burden the Consulting Agencies in this effort.
- When a Sponsor has already begun to develop its Outline in consultation with the Consulting Agencies, repetition of the procedural steps set forth herein are not required to the extent they have already been effectively performed.
- To maximize coordination among the parties to the process—the Sponsor, the Consulting Agencies, and the Corporation—courtesy copies of all formal communications (draft and revised Outlines and Plans and all correspondence, including Consulting Agency comments and Sponsor's responses) from any party should be provided simultaneously to all other parties.

B. Contents of Outlines and Plans

An Environmental Monitoring *Outline* should be a general description of the Sponsor's Compliance and Supplemental Monitoring tasks. In the Outline, the Sponsor should: (1) Attach the monitoring requirements found in permits which it has already obtained or provide a summary of these requirements; (2) discuss the anticipated monitoring requirements (based on the terms of Comparable Permits) for permits not yet obtained; (3) state what substances will be monitored (both regulated and unregulated); and (4) indicate the general location where the monitoring will take place (i.e., source, ambient, or workplace), the general type of monitoring to be performed (such as high-volume sampler or personal dosimeter), and the approximate duration of monitoring tasks.

The Environmental Monitoring *Plan* should be a detailed description of the monitoring tasks set forth in the Outline. The Plan should include all of the specific monitoring terms and conditions of permits and other approvals, and the specific monitoring tasks relating to Supplemental Monitoring, including sampling protocols, monitoring site locations, monitoring frequency, monitoring equipment, analytical methods, etc.[3] The Plan should also provide specific details on the duration of each monitoring task. Like the Outline, the Plan should also state what substances will be monitored; if a more detailed list of substances is available at this stage than when the Outline was prepared, such additional detail should be provided. Similarly, if more details are available on Compliance Monitoring requirements, these should also be provided in the Plan.

In developing its Outline and Plan, if the Sponsor is unable to identify the specific unregulated substances which may be of significant environmental or health concern, the Sponsor should provide a list of the classes of substances (e.g., phenols, polynuclear aromatic hydrocarbons, organic sulfur compounds) likely to be present in various emissions, liquid wastes, or solid wastes and the method(s) by which the specific substances within these classes will be identified and monitored.

In both the Outline and Plan, the Sponsor should provide, as appendices, sufficient background information on its Project to enable the Consulting Agencies to evaluate meaningfully the Outline and the Plan. This information should include an overall process description, a process block flow diagram, plot plans and layouts, and a detailed site description. The Sponsor should also make available to the Consulting Agencies and the Corporation studies, reports, data, etc., which are specifically referenced in the Outline or Plan and/or otherwise used to support the Sponsor's monitoring program.

Neither the Outline nor the Plan need be in any particular format, although both should clearly indicate which monitoring tasks fulfill Compliance Monitoring requirements and which represent Supplemental Monitoring. The Sponsor can tailor the format of its Outline and Plan according to its own needs, but consideration should be given to the comments of the Consulting Agencies regarding format.

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[1] The Corporation has previously notified Sponsors that they must consider the monitoring of unregulated substances. (See, e.g., the Corporation's Second Solicitation Section, Section IV.B.a.1, and Third Solicitation Section, Section III.B.6.b.2).

[1] EPA has prepared a monitoring reference manual for synthetic fuels processes ("Environmental Monitoring Reference Manual for Synthetic Fuels Facilities," EPA Document #600/6-82-027, July 1982) which indicates EPA's areas of interest. This manual contains no monitoring requirements; rather, it is a technical reference document which may be used by drafters and reviewers of Environmental Monitoring Plans.

[2] Sponsors may provide in their Outlines details on any or all aspects of environmental monitoring that are at a level of specificity not required in an Outline but appropriate for a Plan. However, the Corporation's acceptability determination regarding the Outline will be based solely on whether the requirements for an Outline have been met.

C. Development of Outlines

The following is the sequence of steps which should be followed in developing Environmental Monitoring Outlines:

- For a Project proposal submitted under the Corporation's first three General Solicitations (or any future comparable solicitation), the Sponsor should initiate preparation of its Outline no later than immediately after passing the Corporation's strength review. If the Sponsor submits a proposal under a "Competitive Solicitation," the technical proposal should include a schedule for preparing an acceptable Outline; the schedule should provide for immediate initiation of Outline preparation if the technical proposal is found acceptable by the Corporation.
- The Sponsor's draft Outline should be submitted to the Consulting Agencies for their review and comment. (The Corporation will notify the Sponsor as to which Consulting Agency officials to contact.) The Sponsor should confer with the Corporation regarding the timing of submission of the draft Outline (as well as the revised Outline) so that an acceptable Outline can be prepared on a schedule consistent with the anticipated Financial Assistance agreement execution date.
- Consulting Agencies should provide written comments expeditiously to the Sponsor on the draft Outline. It is expected that, absent special circumstances, such comments will be provided within five weeks of receiving the draft.
- In responding to the comments of the Consulting Agencies, the Sponsor should prepare a revised Outline and/or should explain (in a cover letter to the Corporation) the specific reason(s) for not including any specific monitoring task suggested by the Consulting Agencies, as well as for not including monitoring in areas covered in the Guidelines.
- The Sponsor's revised Outline and other material submitted in response to the Consulting Agencies' comments should be submitted to the Consulting Agencies for final review.
- Absent special circumstances, the Consulting Agencies should submit to the Corporation their comments on the revised Outline within four weeks of receiving it.
- The Corporation will evaluate the revised Outline and the Consulting Agency comments and will determine the Outline's acceptability. (See Section VI, Determination of Acceptability.)

D. Development of Plans

The sequence for developing an Environmental Monitoring Plan, including the time periods for Consulting Agency comments, is analogous to that for an Outline set forth above. In brief, the Sponsor develops a draft Plan; it will be reviewed and commented on by the Consulting Agencies; a revised Plan and/or responsive comments will be prepared; final comments will be provided by the Consulting Agencies; and the revised Plan and comments thereon will be evaluated by the Corporation, which will make a determination as to its acceptability.

Each Financial Assistance Agreement will establish a date by which the Sponsor shall submit its final Environmental Monitoring Plan. It is anticipated that the Plan will be required approximately six months after the Financial Assistance Agreement is signed, depending on the complexity of the Plan and other Project-specific circumstances. Following the Plan's submittal, it must be found acceptable by the Corporation within a time fixed in the Financial Assistance Agreement (approximately two months from submission).[6]

VI. Determination of Acceptability

The Corporation will determine the acceptability of an Environmental Monitoring Outline and Plan by evaluating whether the Sponsor has, through its specific treatment of the substantive areas set forth in these Guidelines, developed a sound monitoring program. This evaluation will be performed in the context of the Corporation's overall environmental monitoring goal of identifying and characterizing areas of concern and developing an information base for the mitigation of problems associated with the replication of synthetic fuels projects.

Specifically, in determining acceptability, the Corporation will consider whether the Sponsor has, in the level of detail appropriate to the Outline or the Plan: (1) included all known and anticipated Compliance Monitoring tasks; (2) included an appropriate list of unregulated substances or classes of substances to be monitored; (3) proposed monitoring frequencies, locations, methods, and durations which are adequate to produce a statistically valid body of data; (4) developed satisfactory worker exposure and monitoring surveillance programs and provided for the development of a Worker Registry; (5) provided for a sound Quality Assurance/Quality Control (QA/QC) program; (6) proposed an adequate reporting and data management program; and (7) committed to performing other monitoring should circumstances indicate that it is warranted, e.g., ecological monitoring and monitoring of possible public nuisances.

In determing the acceptability of both Outlines and Plans, the Corporation will consider the Consulting Agencies' comments and monitoring recommendations and the Sponsor's responses to these comments and recommendations. The Corporation will also consider the costs to the Sponsor of monitoring relative to the potential usefulness of this information.

For Projects receiving financial assistance, an Environmental Monitoring Outline found to be acceptable by the Corporation will then be incorporated into the Financial Assistance Agreement. As a general rule, if the Corporation does not find a Sponsor's Outline to be acceptable, it will not enter into a Financial Assistance Agreement until the Outline is made acceptable. With respect to Environmental Monitoring Plans, failure to submit an acceptable Plan as required by Section 131(e) (as well as failure to properly implement Plans determined to be acceptable by the Corporation) will be addressed under the default and remedy provisions of the Financial Assistance Agreement.

VII. Scope of Monitoring

A. General

Sponsors should monitor during all phases of a Project's life cycle: pre-construction (baseline), construction, operation, and post-operation (facility shut-down and site reclamation). Generally, Compliance Monitoring will be performed during each phase, while Supplemental Monitoring will be applicable primarily to the operational phase of the facility.[6]

B. Compliance Monitoring

A Sponsor's Compliance Monitoring activities are determined by the Project's permit requirements and other regulatory obligations. The Guidelines do not alter, or require duplication of, any Compliance Monitoring activities. Any change in permit conditions or other Compliance Monitoring requirements occurring after an Outline or Plan has been approved by the

[5] Where monitoring activities, e.g., baseline or construction monitoring, are to be initiated prior to a determination of Plan acceptability, the Outline should indicate when this monitoring will begin.

[6] Generally, Supplemental Monitoring during the operational phase would be performed during steady-state conditions; however, limited Supplemental Monitoring may be required for non-steady-state conditions if significant emissions could occur, such as during a start-up period.

Corporation will automatically change the Outline or Plan accordingly.

C. Supplemental Monitoring

Supplemental Monitoring should be performed by the Sponsor when such monitoring can produce environmental and health data, not otherwise required by Compliance Monitoring, which are relevant to project replication, i.e., data which are applicable to synthetic fuel facilities that may be built in the future using comparable technology or in the same vicinity or in similar settings. In developing its Supplemental Monitoring program, the Sponsor should address as appropriate the generic areas specified in Section D (Substantive Monitoring Areas) which include:

- Identification and characterization (i.e., determining the concentration) of unregulated substances, such as certain trace metals and hydrocarbons, which may be present at levels of significant health and environmental concern, e.g., concentrations which could result in (1) health effects such as carcinogenesis, mutagenesis, teratogenesis, reproductive effects, and other systemic disorders, and (2) environmental effects such as significant impacts on terrestrial and aquatic species.[6]
- Assessment of occupational exposures by performing industrial hygiene monitoring, conducting comprehensive medical surveillance of workers, and establishing a Worker Registry.
- Ecological monitoring where warranted based on the results of Ambient Monitoring (and not otherwise required by permit).
- Public nuisance monitoring (e.g., monitoring of noise and odor).

In identifying and characterizing unregulated substances, the Sponsor is encouraged to consider a two-phased approach. The purpose of the first phase is to identify the substances or groups of substances which are released from a Project, utilizing survey analytical techniques, such as gas chromatography/mass spectroscopy. Using the results of the first phase, monitoring will be redirected in the second phase for the purpose of providing detailed data (e.g., quantities and/or concentrations) on selected substances which are of significant environmental or health concern. (During phase two, some changes in anticipated monitoring tasks may be appropriate; see Section XI.B.2., "Modification of Monitoring Requirements").

In addition, the Sponsor should consider the following points in developing Supplemental Monitoring tasks in its Outline and Plan:

- The Sponsor's Supplemental Monitoring need not include monitoring which is relevant essentially to a specific Project at a specific site unless such monitoring has broader applicability to Project replication. (However, such site-specific monitoring, if required by permit, would be included as Compliance Monitoring in the Outline and Plan.)
- The Sponsor's Supplemental Monitoring need not include monitoring of unit operations which are common to established industries and which have already been well characterized with regard to unregulated substances, e.g., certain coal preparation operations.

D. Substantive Monitoring Areas

As part of a Sponsor's monitoring program (Compliance and Supplemental Monitoring), three generic areas of environmental and health monitoring—source, ambient, and workplace—should be performed. Additional monitoring, such as ecological monitoring, may also be appropriate in some cases.

1. Source Monitoring

- For air emission Source Monitoring, the Sponsor should monitor, as required by permit, for regulated substances, including those covered under applicable New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants (NESHAPs), etc., as well as for unregulated substances which may be emitted in concentrations of significant environmental or health concern.[7]
- For wastewater effluent Source Monitoring, including underground releases and releases into publicly owned treatment works (POTWs), the Sponsor should monitor, as required by permit, for regulated substances including those in NPDES permits or specified by EPA "consent decrees," as well as for unregulated substances which may be discharged in concentrations of significant environmental or health concern. The Sponsor should perform Supplemental Monitoring with regard to wastewater being discharged into POTWs if these facilities are not subject to monitoring requirements under the National Pollutant Discharge Elimination System (NPDES).
- For solid and hazardous waste monitoring, the Sponsor should monitor such wastes pursuant to the requirements of the Resource Conservation and Recovery Act, as well as for unregulated substances which may be present at concentrations of significant environmental or health concern. The Sponsor need not perform on-site Supplemental Monitoring with regard to solid and hazardous wastes shipped to off-site facilities which is redundant to monitoring required of operators of these facilities.

2. Ambient Monitoring

- For ambient air monitoring, the Sponsor should monitor, as required by permit, those pollutants identified in EPA's PSD and NESHAP s regulations, and applicable state regulations, as well as for unregulated substances which, based on projections or the results of source monitoring, have a reasonable likelihood of being emitted to the unconfined environment and could result in concentrations of significant environmental or health concern.
- Where the Project will be discharging into surface waters, the Sponsor should monitor, as required by permit, regulated water quality parameters and pollutants as well as for unregulated substances which, based on projections or the results of source monitoring, have a reasonable likelihood of being discharged in concentrations of significant environmental or health concern.
- Where substances have the potential to impact groundwater, the Sponsor should conduct groundwater monitoring to identify contamination from leachates, discharges, or underground injection. Groundwater monitoring includes monitoring as required by the Safe Drinking Water Act, the Resource Conservation and Recovery Act, etc., as well as for unregulated substances which have a reasonable likelihood of being present in concentrations of significant environmental or health concern.
- Where substances come into contact with the soil and have the potential to contaminate it, the Sponsor should monitor such soil for regulated substances as required by permit, as well as for unregulated substances which have a reasonable likelihood of

[6] The Corporation views unregulated substances as including those substances not presently regulated under any law and those which may be regulated under one law but not another. For example, a substance may be regulated under the Occupational Safety and Health Act but not regulated under the Clean Water Act; monitoring for such a substance in the water would be a "Supplemental Monitoring" requirement, but in the workplace would be a "Compliance Monitoring" requirement.

[7] When Project emissions are determined to be below those levels for triggering permit-mandated monitoring (notably for prevention of significant deterioration (PSD) review), monitoring to determine the actual level of emissions (vis-a-vis calculated levels) of regulated substances should be performed where necessary to develop a data base relevant to Project replication. It is expected that such monitoring would be of short duration.

being present in concentrations of environmental or health concern.

3. Worker Health and Safety Monitoring: Worker Registries

• The Sponsor should monitor potentially hazardous substances or conditions at the Project during routine work, maintenance, repair, and sampling activities throughout construction, operation, and decommissioning of the facility as required by the Occupational Safety and Health Administration and any other relevant regulatory agency. The Sponsor should also monitor for unregulated substances which may be present at concentrations of significant health concern in the workplace during operation.

• The Sponsor should develop and maintain a Worker Registry for the life of the Project. The Registry should include information from medical and work histories, physical examinations and industrial hygiene exposure records, and demographic and job category data. Registries should provide information which can be used to determine if health impacts, when identified in workers, are related to various substances or conditions to which workers had been exposed at the Project. The specific areas covered by the Registry should relate to the known and suspected health concerns associated with the Project and its technology. The Sponsor should work with Consulting Agencies to promote commonality of Worker Registry format for each synthetic fuel technology and to develop the method by which the confidentiality of workers' identities will be protected.

4. Other Monitoring

• The Sponsor should commit to performing ecological monitoring in the event that substances emitted from the Project demonstrate the potential (based on Ambient Monitoring data) to significantly impact terrestrial and aquatic species; however, unless required by Compliance Monitoring, such monitoring should be performed only if the collection of such ecological data would allow the identification and characterization of areas of concern and develop an information base for the mitigation of problems associated with the replication of synthetic fuels plants in the same vicinity or in similar settings.

• The Sponsor should also commit to the monitoring of possible public nuisances, such as noise and odor, in the event that it becomes necessary to address public complaints.

VIII. Quality Assurance/Quality Control

The Environmenal Monitoring Outline and Plan should indicate what Quality Assurance/Quality Control (QA/QC) measures will be taken to assure that environmental and health monitoring data produced will be sound. The Outline should briefly indicate the Sponsor's proposed QA/QC program while the Plan should establish the specific requirements of a comprehensive QA/QC program.[9]

IX. Data Management; Reporting Requirements

The Sponsor should develop a data management program, in consultation with the Consulting Agencies, that addresses the acquisition, storage, retrieval, analysis, and reporting of the monitoring data for the life of the Project. The Sponsor should permanently retain all monitoring records; alternatively, the Sponsor should make the records available to the Corportion for archiving, with the exception of proprietary information, or dispose of them with the written consent of the Corporation. The basic approach for the data management program should be indicated in the Outline and the details of the program should be fully described in the Plan.

The Sponsor should submit to the Corporation quarterly and annual reports containing information, summaries, and analyses as indicated below:

• Quarterly reports should:

—Contain summaries of the environmental and health monitoring data collected during the prior quarter.

—Identify and characterize the unregulated substances present at concentrations of significant environmental and health concern.

—Contain copies of all compliance reports and analyses sent by Sponsors to the regulatory agencies during the prior quarter.

—Describe the Project's permit compliance status, including a description of any significant changes to the terms of permits and notices of violation issued to the Sponsor from the regulatory agencies.

—Identify potential problem areas encountered during the prior quarter, e.g., problems with monitoring techniques/procedures, sampling, quality control, etc., and indicate actual, anticipated, or possible solutions.

—Recommend modification or deletion of Supplemental Monitoring tasks not yielding useful data, including the basis for the recommendation.

• Annual reports should:

—Contain the fourth quarterly report.

—Summarize and analyze the monitoring information from all prior annual reports, the three prior quarterly reports, and the last quarterly report from the previous year, which shall include: (1) Identifying trends and patterns in the data; (2) summarizing and interpreting data from the Worker Registry; and (3) correlating the concentration of unregulated substances being monitored with the operating conditions of the Project and the performance of environmental controls.[9]

—Based upon monitoring data and the reports which have been submitted, indicate if there are any trends of environmental or health concern.

—Indicate whether any of the problem areas identified in previous quarterly or annual reports have been resolved and, if not, what mitigation measures should be taken.

X. Confidential Information

It is expected that, as a general rule, all monitoring data, data summaries, data analyses, reports, etc., provided to the Corporation by the Sponsor will not contain proprietary or otherwise confidential business information. Where certain types of monitoring data could reasonably contain proprietary information, these should be defined in the Environmental Monitoring Plan. Data will not be provided to federal or state agencies except as authorized by law and unless its confidentiality is protected.

The contents of all Environmental Monitoring Outlines and Plans (including drafts and revisions), all formal written comments of the Consulting Agencies on the Outlines and Plans, minutes of Monitoring Review Committee meetings, and all quarterly and annual reports will be publicly available.[10] Public information requests

[9] Federal guidelines on QA/QC are available from EPA and the National Institute for Occupational Safety and Health. See "Development and Validation of Methods for Sampling and Analysis of Workplace Toxic Substances," Research Report DHHS (NIOSH) Publication No. 80-135, September, 1980; "Interim Guidelines and Specifications for Preparing QA Project Plans," EPA Report No. QAMS-005/80, December 29, 1980.

[9] It is expected that the Sponsor will monitor the efficiency of environmental control systems for all Source Monitoring activities; where such monitoring generates proprietary information on such systems, the Sponsor shall provide non-proprietary summaries.

[10] Copies of these documents will be available in the Corporation's Public Reading Room. The Corporation encourages the Consulting Agencies to make these documents available, particularly in the area in which the Project is located.

will be handled in accordance with the Corporation's Guidelines on Disclosure and Confidentiality.

XI. Monitoring Review Committees

A. Membership; Meetings

Each Financial Assistance Agreement will establish a Monitoring Review Committee (the "Committee") consisting of representatives of the Sponsor, the Consulting Agencies, and the Corporation. The Corporation's representative will act as chairperson for the Committee. The Committee will meet, at a mutually convenient time and place, at least once per year, within two months after the issuance of the annual report.

B. Functions

1. *Data Review.* Each Monitoring Review Committee will review the Sponsor's environmental and health monitoring information, including its quarterly and annual reports. The main purpose of this review is to determine if there are any significant findings among the data, e.g., trends or patterns in pollutant releases from the Project which could result in significant health or environmental impacts. The Corporation shall prepare minutes of each meeting which summarize all Committee discussions, findings, and recommendations.

2. *Modification of Monitoring Requirements.* Based on the Committee's ongoing review of monitoring information, members of the Committee can recommend to the Corporation that: (1) Certain monitoring tasks be discontinued, modified or added;[11] (2) new analytical techniques or instrumentation be substituted; or (3) the format of the quarterly and annual reports be changed.

The Corporation, after consultation with all Committee members, will authorize such changes in Environmental Monitoring Plan requirements as are appropriate, after reviewing the reasons therefor. Normally, the Corporation will not require Supplemental Monitoring beyond that specified in the Plan unless the costs of the additional requirements have been, or are being, offset by the elimination of comparable costs.[12]

XII. Amendments to Guidelines

Amendments to these Guidelines may be authorized in writing by the Corporation. All Sponsors with projects before the Corporation at the time any amendment is made will be notified immediately of such amendment. Copies of these Guidelines, as amended, will be available in the Corporation's Public Reading Room.

Lee C. Axelrod,

Acting Executive Vice President, U.S. Synthetic Fuels Corporation.

October 6, 1983.

Note: This reprint incorporates two substantive corrections that were published in the **Federal Register** of November 22, 1983. It also reflects corrections of several typographical errors.

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[11] Where production, process, pollution control, or feedstock changes occur that may reasonably be expected to affect Project emissions, monitoring tasks should be discontinued, modified, or added accordingly. However, modification of the Sponsor's Environmental Monitoring Plan shall have no effect on the Sponsor's monitoring responsibilities under federal, state, and local requirements.

[12] Offsets will not apply when monitoring tasks are modified or added because of changes in production, process, pollution control, or feedstock.

CHEMICAL MANUFACTURERS ASSOCIATION

WRITTEN STATEMENT

OF THE

CHEMICAL MANUFACTURERS ASSOCIATION

BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES,

AGRICULTURE RESEARCH, AND ENVIRONMENT

OF THE

HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY

ON

ENVIRONMENTAL MONITORING

March 28, 1984

2501 M Street, NW • Washington, DC 20037 • Telephone 202/887-1100 • Telex 89617 (CMA WSH)

The Chemical Manufacturers Association (CMA) is pleased to submit comments to the Subcommittee on Natural Resources, Research and Environment on the Environmental Monitoring Improvement Act of 1984. CMA is a nonprofit trade association whose company members represent more than 90 percent of the productive capacity of basic industrial chemicals within this country. CMA members are directly and significantly affected by the environmental monitoring requirements associated with the regulatory programs implemented from environmental legislation passed over the last decade.

Mr. James Norris, Supervisor for Analytical and Quality Control for CIBA-GEIGY Corporation, presented CMA views on environmental monitoring before this subcommittee on June 2, 1983. We refer you to Mr. Norris' statement (attached) and emphasize that CMA still supports the views presented by Mr. Norris in that statement.

We are pleased to note that concerns and suggestions brought forth during the June hearings have already resulted in action toward solving the nation's environmental monitoring inadequacies. In late 1983, Mr. Al Alm, Deputy Administrator of the Environmental Protection Agency, convened the Agency's Environmental Monitoring Task Force. This Task Force is comprised of EPA and state experts on all aspects of environmental monitoring.

On December 23, 1983, Mr. Alm issued the Agency's first en-

vironmental monitoring policy statement. We applaud this action as the first step toward the implementation of a technically sound, viable environmental monitoring system. As Mr. Alm notes in his statement, "this policy is only the first step in our efforts to improve the status of environmental monitoring in the Agency. Subsequent efforts include the production of monitoring strategy by each EPA line program in May, and a series of recommendations from the Task Force relative to sorting out roles, responsibilities and relationships among the various offices with responsibilities for monitoring at EPA." We refer you to EPA's full policy statement (attached) for detailed information.

CMA believes that the responsibility for environmental monitoring should and does fall upon EPA. EPA's movement toward increasing and improving their involvement in this area strengthens our conviction that EPA is the proper 'home' for this effort.

In this light, we believe that establishment of a national Environmental Monitoring Board is not necessary. Furthermore, we encourage Congress and EPA to take the following actions:

- Provide support for, and if necessary, redirect current EPA budget monies to the EPA Office of Research and Development for coordinating and managing the Agency's quality assurance program as well as developing new monitoring methods, operating research monitoring programs and developing an Agency-wide protocol for validating analytical methods.
- Provide support for, and if necessary, redirect current EPA budget monies to the EPA Office of Policy, Planning and Evaluation for promoting the development of baselines and

and trends, evaluating existing monitoring systems, coordinating Agency review of monitoring strategies and proposals and priority setting.

- o Provide support to pertinent offices within the regulatory agencies such as the EPA Office of International Activities to coordinate environmental monitoring efforts in the international arena in concert with the State Department.
- o Encourage responsible Agency offices to continue to seek the assistance of industry and other experts in their efforts to improve the environmental monitoring system.

If these actions are implemented in support of EPA's current efforts, the enactment of an Environmental Monitoring Act would not be necessary.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 23 1993

OFFICE OF THE ADMINISTRATOR

MEMORANDUM FOR: Assistant Administrators
General Counsel
Inspector General
Associate Administrators
Regional Administrators
Staff Office Directors

FROM: Alvin L. Alm
Deputy Administrator

SUBJECT: Environmental Protection Agency
Environmental Monitoring Policy
Statement

This memorandum transmits the Environmental Protection Agency's first environmental monitoring policy statement. Environmental monitoring, which we have defined as the broad set of activities providing chemical, physical, geological, biological, and other environmental data required by environmental managers, is an essential part of all our activities, including planning and research, rulemaking, compliance assessment, and program evaluation. A system of credible, accurate and correctly applied monitoring information is essential to our overall credibility as an Agency. While a number of activities we undertake compete for scarce resources, we must be sure to require an appropriate balance between those activities and adequate environmental monitoring.

The monitoring policy was prepared by the Agency's Task Force on Monitoring, which I convened, and which was comprised of EPA and State experts on all aspects of environmental monitoring. This policy crystallizes the considerable experience and expertise on environmental monitoring that has been gained over the past several years and organizes it into a set of coherent goals for our program offices to build on in constructing individual monitoring strategies.

I expect each of you to take an active role in your programs' planning for and management of monitoring activities. I also expect you to coordinate monitoring efforts in your program with those of other offices in the Agency and to make maximum use of environmental information in planning and managing your programs. The Task Force developed this monitoring policy so such consultations and cooperation could take place with reference to a shared set of Agency goals and objectives for environmental monitorirg.

This policy is only the first step in our efforts to improve the status of environmental monitoring in the Agency. Subsequent efforts include the production of monitoring strategies by each EPA line program office in May, and a series of recommendations from the Task Force relative to sorting out roles, responsibilities and relationships among the various offices with responsibilities for monitoring activities at EPA. I know I can count on you to support these efforts, and particularly to involve yourselves personally in developing the monitoring strategies called for in this policy statement.

Attachment

12/14/83

ENVIRONMENTAL MONITORING POLICY STATEMENT
ENVIRONMENTAL PROTECTION AGENCY

PURPOSE

Environmental monitoring is an essential part of all Agency activities from planning and research, to rule-making, compliance and pollution control, and evaluating programs' effectiveness. Monitoring, while not an end in itself, is an integral part of a sound environmental program. In order to acquire and successfully use information on the broad range of public health and environmental problems, their causes, and potential for control, EPA, State, and local officials must systematically identify environmental data needs and collect and evaluate extensive chemical, physical, geological, biological, and other data related to pollution effects, sources, transport, and control. This task increasingly has become as complex as it is costly. Despite substantial progress by EPA and States, persistent problems of the past, if left uncorrected, will hinder our ability to meet the new challenges of the future, particularly those involving toxic chemical pollutants. Periodic criticism has focused on: limited coordination, control, or planning of Agency monitoring activities; uncertain quality of the data collected; the design of networks and studies that result in data of limited use; lack of data suitable for trend analyses; difficulty of accessing information; incompatibility of data bases; and the limited analysis and use of environmental data for EPA decision making. While these problems have not been universal, the critical nature of the Agency's monitoring efforts requires that EPA address even isolated incidents of these problems.

The purpose of this policy statement is to establish overall goals and objectives for Agency monitoring programs, which specifically are to:

1. Meet the full range of current and future Agency needs for environmental data.

2. Ensure monitoring is technically and scientifically sound.

3. Ensure environmental monitoring data are managed to facilitate both access and appropriate use in Agency decision making.

4. Ensure effective and coordinated Agency-wide processes for planning and execution of monitoring activities.

5. Ensure that roles and responsibilities are clear in regard to monitoring management and implementation by EPA and State officials.

SCOPE

For the purpose of this policy "environmental monitoring" is broadly defined as the set of activities which provides chemical, physical, geological, biological, and other environmental data required by environmental managers. Under this broad definition, "monitoring" includes: planning the collection of environmental data to meet specific program objectives and environmental information needs; designing monitoring systems and studies; selecting sampling sites; collecting and handling samples; lab analysis; reporting and storing the data; assuring the quality of the data; and analyzing, interpreting, and making the data available for use in decision making and reporting to the public. Thus, "monitoring" would include the data generated to support rule making, to develop control strategies, to determine compliance, to enforce regulations and standards, to assess exposure, to anticipate emerging problems, to plan and evaluate the effectiveness of national and State environmental strategies and program activities, and to establish national, Regional, and State baselines and trends, and to track environmental progress.

GOALS AND OBJECTIVES

The following sections describe in greater detail the specific objectives under each of the goals of the Agency's monitoring policy.

1. MEETING THE FULL RANGE OF NEEDS FOR ENVIRONMENTAL MONITORING DATA

   o EPA national program managers should plan and develop their national environmental monitoring programs to meet the full range of present and projected future uses for which the data are needed. These should generally include uses to:

     - Identify present and future environmental and health problems through national, Regional, State, and local baseline and trend measurement. Such information is necessary to

       -- establish program priorities;
       -- provide regular reports to the public on the state of the environment, important trends over time, and Agency progress; and
       -- evaluate the progress and effectiveness of environmental programs, including delegated programs.

     Wherever appropriate, in addition to changes in environmental quality, these measurements should provide a basis for assessing or estimating exposure of and/or direct effects of pollutants on humans, animals, fish,

and plants, and the risk of environmental damage. Impacts on both health and "welfare" -- that is, effects such as corrosion and changes in aesthetic quality, should be considered.

- Provide the underlying technical basis for environmental management activities in order to:

  -- set sound national, State, and site specific standards and rules;
  -- define effective control strategies and programs;
  -- establish site-specific controls and/or abatement programs;
  -- determine compliance with ambient and source standards;
  -- develop effective enforcement cases; and
  -- support research monitoring to develop environmental models.

- Develop, through research, new and improved monitoring techniques and methods, systems design, sample analysis, and collection methods to better address existing problems and to meet emerging problems.

o EPA managers should plan and design individual monitoring studies or networks to achieve a clearly defined objective and, wherever it is cost-effective to do so, design them to achieve multiple objectives.

o Monitoring networks and sampling surveys should be designed to anticipate future needs and uses of the data. For example,

  - Specimen banking should be considered to allow for retrospective analyses, long-term trend monitoring, and verifying the effectiveness of environmental controls.

  - Gas chromatograms, mass spectrograms, and sample extracts should be preserved in appropriate situations for retrospective analyses of chemicals that subsequently are suspected of having adverse effects.

o Agency managers should make optimum use of environmental monitoring data already collected by States and other Federal agencies.

2. ENSURING AGENCY MONITORING IS TECHNICALLY AND SCIENTIFICALLY SOUNI

o Prior to monitoring, environmental managers should clearly identify the use for which the data will be collected. Provisions should exist for network or sampling design, sample handling, sample analysis, quality assurance, data handling, and data interpretation commensurate with the uses to which the data will be put.

- o Networks and sampling studies should be designed so the resulting data are complete and valid relative to the objectives.
  - Prior to data collection the completeness of data (i.e., the amount of data needed to satisfy the objective) should be documented.
  - Sampling sites, sampling procedures, and sampling frequencies and parameter coverage should be selected to ensure that the resulting data accurately represent the medium sampled to meet the objectives.
  - EPA should assist States in design of systems and studies by providing guidance, technical assistance, and peer review.
- o Monitoring required of States or the regulated community should meet all applicable Office of Management and Budget clearances.
- o Environmental monitoring data should be quality assured at all phases of monitoring so that the data are of known quality and the quality is thoroughly documented. Historical data should be used with appropriate care and validation, recognizing the possible limitations of some data due to the lack of quality assurance or other information on potential sources of error.
  - All samples should be collected, handled, and analyzed in adherence with the Agency's mandatory quality assurance program.
  - The quality assurance/quality control program for each monitoring study or network should control and quantify, to the extent possible, the total method error. Potential sources of error include sampling, sample handling, laboratory measurements, calculations, and data processing.
- o Monitoring networks and sampling surveys should be based to the extent possible and where appropriate on prototype or pilot studies to determine how monitoring would actually function in practice, to demonstrate by example the analyses to be made of the data, and to allow assessment of alternative monitoring approaches prior to large fixed commitments.

3. MANAGING ENVIRONMENTAL MONITORING DATA TO FACILITATE ACCESS AND APPROPRIATE USE IN DECISION MAKING AND AVAILABILITY TO THE PUBLIC

- o Environmental data should be stored in automated data systems or filing systems for hard copy with the location, time of sample collection, relevant quality control

data, and other required information so that other potential beneficiaries can easily obtain and use the data. Consultant contracts should provide for timely access to data.

- o Data should be accompanied by documentation of quality assurance/quality control (QA/QC) procedures, including quantitative statements of precision and accuracy, where appropriate. The statements should pertain to the entire measurement system and at a minimum include sample collection, sample handling, and lab analysis.

  - The statements should be reported in hard copy reports; the long-term goal is to include statements in ADP systems.

- o Data bases which include confidential data should be managed in a way that will permit use of and access to key non-confidential environmental data.

- o Program offices, Regional offices, and the Office of Research and Development (ORD) should keep EPA's Information Clearinghouse updated.

  - Offices should submit information to the Clearinghouse at the start of each new monitoring initiative and at the completion of each monitoring initiative.

  - Offices should review and update their Clearinghouse information at regular intervals.

- o Agency managers should use pertinent environmental data wherever possible in Agency decision processes, including setting EPA policies and priorities.

- o Agency managers should report regularly to the Administrator environmental information and policy implications for their programs.

- o Agency managers should routinely develop reports which interpret and make available to the public significant data and findings of monitoring programs, including those describing important national trends or emerging problems and the strategies in place or planned for addressing those problems.

- o Agency managers should provide the Regions and States guidelines for interpreting and using environmental data. Section 1 of this policy has generally identified the uses of data and areas for which guidelines may be appropriate.

4. ENSURING EFFECTIVE AND COORDINATED AGENCY-WIDE PLANNING AND EXECUTION OF MONITORING ACTIVITIES

The basic planning, management, and implementation of monitoring programs resides with EPA's program offices, in some situations with the Office of Research and Development and with State and local governments. EPA's program offices attempt to ensure that EPA's and States' and local governments' monitoring is both effective, and where appropriate, coordinated with other programs, States and other Federal activities. Program offices and ORD establish requirements and provide guidance to State and local governments on monitoring, including network design, sampling and analysis, quality assurance, and reporting. They also have sponsored efforts to define more clearly monitoring needs and to integrate activities. Examples of some program office efforts to strengthen Agency monitoring are standing work groups on monitoring, priority workplans arranged around specific topic areas and coordinated through ad hoc committees, participation in the Clearinghouse, and regular meetings of quality assurance officers and of Regional coordinators.

To ensure maximum coordination and integration of efforts across the Agency as well as within programs, EPA also has in place several mechanisms to provide Agencywide management and coordination of monitoring efforts. The Office of Research and Development is responsible for coordinating and managing the Agency's quality assurance program, as well as developing new monitoring methods and operating research monitoring programs; the Office of Administration and Resources Management (OARM) is responsible for the management of Agency automated data systems, examining issues concerning laboratory facilities, and through the Office of the Comptroller, conducting budget analyses; the Office of Policy, Planning, and Evaluation (OPPE) is responsible for promoting the development of baselines and trends, evaluating existing monitoring systems (OPPE will develop criteria for how they will evaluate such systems), and coordinating Agency review of monitoring strategies and proposals. Also, OPPE is responsible for coordinating development of the Administrator's Guidance and is responsible for the Management Accountability System, both of which provide mechanisms for ensuring that priorities and tasks established and approved by the Administrator are accomplished.

To enhance these current efforts, the following changes are being introduced to strengthen coordination of monitoring activities across the Agency and to permit most effective use of our limited monitoring resources.

- Monitoring Strategies: Monitoring strategies will be prepared by each Headquarters Program Office, including the Office of Research and Development, and subsequently evaluated annually and updated as needed so that program offices and the Administrator and Deputy Administrator may use them in planning and managing environmental monitoring activities throughout the Agency. Every program's original monitoring

strategy or significantly altered update will be reviewed by OPPE, by other programs and Regional reviewers, and by the States where appropriate. The States should be involved in the initial stages of the development of monitoring strategies for programs in which States will play a major role. An outline of the content of the strategies is given in the attachment and will be described more fully in separate guidance.

- Monitoring Budgets: Both to ensure that adequate resources are devoted to the collection, analysis and management of environmental data, and that Agency resources are used effectively and efficiently, OPPE will work with the Office of Administration and Resources Management to conduct an overall budget analysis of monitoring. Budget reviews will make use of the monitoring strategies.

- Laboratory Capability and Professional Training: To carry out Agency programs, Regional laboratories should maintain or have access to appropriate state-of-the-art field and analytical equipment and personnel with needed skills. Regional laboratories and other EPA laboratories, in conjunction with appropriate program offices, will prepare and update annually a three or more year plan for equipment purchases.

  Regional laboratories and other EPA laboratories should maintain accurate inventories of their scientific equipment in the Personal Property System managed by the Office of Administration and Resources Management.

  Program offices should, at the time of proposing regulations or environmental standards which require monitoring by EPA in the Federal Register, carefully consider the adequacy of monitoring capability, including laboratory equipment, needed to carry out the monitoring. Programs should also consider State and local needs.

- Technical Guidance: To enable the technical guidance the Agency produces to be coordinated, sampling and analytical methods should include a clear description of their official status and relationship to other Agency sampling and analytical methods.

  The Office of Research and Development is directed to develop an Agency-wide standard protocol for validating analytical methods. This protocol should be used by all programs whenever they validate methods.

  Performance data on lab analytical methods should be reported to ORD in the required format to keep current the document titled Compilation of Data Quality Information. This document provides environmental measurement method performance data for establishing achievable data quality goals.

5. ENSURING CLEAR ROLES AND RESPONSIBILITIES

As this document states, many offices and organizations in EPA as well as State and local government agencies are involved in the Agency's different monitoring efforts. Some have line responsibility for design and implementation of monitoring systems and for collecting, analyzing, and reporting data. Others are responsible for setting and overseeing policy and cross-program coordination. Because of the variety of monitoring that the Agency carries out or requires, environmental managers at all levels need to clearly understand these various roles and responsibilities. To ensure this, the Deputy Administrator will clearly delineate the roles and responsibilities of the various offices and agencies involved in monitoring activities.

ATTACHMENT

ENVIRONMENTAL MONITORING STRATEGIES

To implement monitoring programs that achieve the goals established in the Environmental Protection Agency's Monitoring Policy, each line program (Office of Air and Radiation, Office of Water, Office of Solid Waste and Emergency Response, Office of Pesticides and Toxic Substances, and Office of Research and Development) will develop program monitoring strategies. These strategies will be key documents for Agency-wide and program management of the Agency's monitoring activities.

Monitoring strategies will be prepared and subsequently updated as needed. The strategies, including existing strategies, should be evaluated annually by the program offices and updated as needed so that the program offices may use them in preparing their budgets. Drafts of new strategies or copies of existing strategies should be submitted to the Deputy Administrator (DA) by April 4. Following the submissions, the Assistant Administrators shall brief the DA on their monitoring strategies, including the use of the data, benefits of the data, and coordination with other programs and States and local agencies and other Federal agencies. The goal is to have complete and up-to-date strategies submitted by the Assistant Administrators by May 25 of each year.

Completing a new strategy or substantially revising an existing strategy may not be achievable by April and May of 1984. Most strategies will generally require considerable intra-EPA coordination among program offices and enforcement, research, and Regional Offices. Also coordination with the States, local agencies, and other Federal agencies will usually be necessary. Therefore, for the April and May 1984 dates, a program office should at least complete an interim document that provides the Administrator and Deputy Administrator with a description of the approach the program is taking to monitoring. The description should include the program's data needs, how the program will use the data in programmatic decisions, the approach to collecting the data, and the resource implications. Because not all aspects of the monitoring strategy may be completed, milestones for completing the full strategy, including adequate coordination, should be included. The milestones for completing a strategy should not extend beyond May 1985.

The final strategies, and interim documents to the extent possible, as a minimum should contain the elements listed below. Because every program's monitoring strategy will be reviewed by other programs, each program should try to adhere to the outline as closely as possible.

Outline for Monitoring Strategies

- Describe the goals and objectives of the monitoring program and identify the program's data needs (specify priorities).
- Describe the extent to which these needs are now being met.
- Outline the plan for program's monitoring to meet these needs.
- Describe how design, sample handling, chemical analysis, data analysis and data processing will be carried out to assure (1) representativeness and (2) quantification of overall error bounds.
- Describe linkages with other programs, including monitoring programs, criteria and standards and risk assessment; describe linkages with other Federal agencies.
- Identify technical barriers, issues, and opportunities.
- Clarify the respective responsibilities of various Headquarters offices, the Regions, and State and local programs.
- Identify data processing and data analysis tasks.
- Provide a schedule for implementation.
- In an appendix, describe costs and other relevant resource issues.
  - Evaluate alternative strategies under varying levels of resources.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
THE ADMINISTRATOR

MEMORANDUM FOR: Assistant Administrators
General Counsel
Inspector General
Associate Administrators
Regional Administrators
Staff Office Directors

FROM: Alvin L. Alm
Deputy Administrator

SUBJECT: Guidance for Preparing Environmental Monitoring Strategies

This memorandum provides guidance for preparing the monitoring strategies called for in the Environmental Monitoring Policy which I recently issued. The Office of Air and Radiation, Office of Water, Office of Solid Waste and Emergency Response, Office of Pesticides and Toxic Substances, and Office of Research and Development each will develop monitoring strategies. Draft strategies are due April 4, 1984; final strategies are due May 25, 1984.

The development of these strategies is an important step in ensuring that the Agency moves closer to the goals of the Policy -- conducting and managing monitoring activities so that programs:

1. Meet the full range of current and future Agency needs for environmental data.

2. Ensure monitoring is technically and scientifically sound.

3. Ensure environmental monitoring data are managed to facilitate both access and appropriate use in Agency decision making.

4. Ensure effective and coordinated Agency-wide processes for planning and execution of monitoring activities.

5. Ensure that roles and responsibilities are clear in regard to monitoring management and implementation by EPA and State officials.

The strategies will give us, for the first time, a comprehensive understanding of our needs for environmental information, the activities now under way and planned to meet those needs, and the interrelationships between programs' monitoring efforts. They will also give us the capability to more effectively plan for and manage monitoring activities across the Agency and to shift resources where necessary.

I recognize that, where programs are developing new monitoring strategies or substantially revising an existing strategy, it may not be possible to prepare the complete strategy by May of 1984, especially where strategies will require considerable coordination within EPA and with the States, local agencies, and other Federal agencies. Therefore, for the May 1984 deadline, a program office does not need to have final strategies for those new and substantially revised monitoring activities. Each program, though, should at least complete an interim document for those areas which provides a description of the approach the program is taking to monitoring. The description should include the program's data needs, how the program will use the data in programmatic decisions, the approach to collecting the data, current gaps that exist, and the resource implications of implementing the strategy. For those aspects of the monitoring strategy that are not completed, milestones for completing the strategy, including adequate coordination, must be included. No milestones for completing a strategy should extend beyond May 1985.

I have been pleased with the progress made by the Monitoring Task Force to date and look forward to the individual program monitoring strategies.

Attachment

12/14/83

GUIDANCE FOR PREPARING ENVIRONMENTAL MONITORING STRATEGIES

INTRODUCTION

This document is the companion piece to the Environmental Protection Agency's Monitoring Policy Statement and provides guidance to the program offices for preparing environmental monitoring strategies. Programs' draft strategies are due April 4, 1984; final strategies are due May 25, 1984.

PURPOSE OF STRATEGIES

Systematic and well thought out environmental monitoring that meets the Environmental Protection Agency's needs for a wide range of information is essential for the overall credibility of the Agency's programs.

The Monitoring Policy specifies that each line program (Office of Air and Radiation, Office of Water, Office of Solid Waste and Emergency Response, Office of Pesticides and Toxic Substances, and Office of Research and Development) will develop program monitoring strategies. Having written monitoring strategies for each program that address similar aspects of monitoring should give managers and staff throughout the Agency a better understanding of the many environmental monitoring efforts under way. It should also improve coordination of monitoring activities between programs, between Headquarters and the Regions, and between EPA and State and local agencies conducting environmental monitoring. Finally, preparing monitoring strategies will also be a way to identify where monitoring that is needed is not under way, problems with monitoring that need improvement, and activities that are duplicative of other programs' efforts or that are not effective and need to be corrected.

APPROACH

This guidance follows the outline for monitoring strategies included as an attachment to the Monitoring Policy. Each program's monitoring strategy should:

- o define the full range of its environmental data needs,
- o outline how those needs are being and will be met,
- o identify problem areas and present specific actions that will be taken to address them, and
- o provide schedules for achieving key interim and final monitoring milestones.

In preparing its strategy, each program office should consider each point of the Policy Statement to ensure that the strategy is consistent with the Policy. Specifically the goals and objectives for Agency monitoring activities stated in the Policy are to:

1. Meet the full range of current and future Agency needs for environmental data.

2. Ensure monitoring is technically and scientifically sound.

3. Ensure environmental monitoring data are managed to facilitate both access and appropriate use in Agency decision making.

4. Ensure effective and coordinated Agency-wide processes for planning and execution of monitoring activities.

5. Ensure that roles and responsibilities are clear in regard to monitoring management and implementation by EPA and State officials.

More than one strategy may be necessary for some offices. For example, a program might choose to develop one strategy to deal with compliance monitoring and data reported by sources and another strategy to deal with ambient and other types of monitoring. Also, some programs may already have existing strategies that fulfill most or all of the elements of a strategy as specified by the Policy. If so, programs may use existing strategies and supplement them as needed. Because many offices will be reviewing the strategies to ensure coordination, the strategies or supplemental material should adhere to the outline as closely as possible.

The strategies should be succinct, with the length of each strategy not expected to exceed 50 pages.

This guidance is not intended to be comprehensive for every aspect of a strategy, nor is it intended to inhibit a program office's creativity in preparing its strategy. Furthermore, not all elements of a strategy outlined in the guidance will be equally applicable to all monitoring activities. For example, some programs require much more coordination with States than other programs. Therefore, programs should try to cover the items in the guidance but should not be constrained to those items.

CONTENT OF STRATEGIES

SECTION 1: PROGRAM'S MONITORING GOALS AND OBJECTIVES AND ENVIRONMENTAL INFORMATION NEEDS

A clear statement of the program's monitoring goals, objectives and environmental information needs, including both narrow operational and broader long-term needs, is perhaps the most important section of the strategy. This section should answer why such information is needed, what questions are to be answered, what decisions will be based on the monitoring information, and what the relative priorities of these needs are.

Some statutes mandate certain monitoring, or specify activities that require monitoring, in order to carry out the activities. These legislated activities and related monitoring requirements should be identified in this section of the strategy.

In preparing this section of their strategies, programs should refer to the information needs that are listed in the Monitoring Policy. Examples of questions that a program should consider when developing its strategy are:

A. What Data Will the Program Collect to Make Assessments of Status, Trends, and Emerging Problems?

- For which chemicals, class of chemicals, or other parameters will national, Regional, State and local environmental baselines and measurement of trends be established? Some baselines and trends may have already been established by existing monitoring networks or programs, and these should be identified in the monitoring strategy.
- For which populations or species will monitoring data be collected to allow exposure and risks to be assessed? What environmental damage, such as corrosion and/or impairment of aesthetics, will be assessed?
- For what types of problems and for which chemicals or class of chemicals will monitoring be done to detect emerging problems?

B. What Monitoring Will the Program Do to Support Operational Needs?

- What rulemaking, including the chemicals, class of chemicals or industrial processes, will be supported by monitoring?
- For which sources or classes of sources is compliance to be determined? What are the relative priorities of these sources for compliance monitoring?
- For which ambient standards will compliance be determined?
- What is the anticipated level of enforcement monitoring that will be required?
- What specific control activities will be monitored to evaluate program effectiveness? In what terms will effectiveness be measured (e.g., environmental quality, exposure, and/or risk)?

C. What Research is Planned for Developing New or Improving Existing Monitoring Methods Such as Instrumentation, Network Design, Sample Collection and/or Analysis?

This list of questions is not intended to be an exhaustive list or apply equally to all programs. However, programs should define their monitoring data needs as precisely as possible.

Also, because some data often can be used for more than one purpose, programs may want to display their needs in a table or matrix.

SECTION 2: DESCRIBE THE EXTENT TO WHICH NEEDS ARE NOW BEING MET

This section of the strategy should describe the existing networks and/or other monitoring efforts. In addition, the strategy should describe which environmental information needs identified in Section 1 are being fulfilled by the current monitoring efforts and how they are being met.

This section should identify each monitoring program or individual project and describe for each:

1. the goals and objectives
2. the data needs that are being satisfied or will be satisfied.

This section also should identify the additional monitoring needed, beyond that which currently is conducted, to fulfill the environmental information needs identified in Section 1 of the strategy. This additional monitoring should be described in terms of the type and extent of the networks and/or other projects or special studies, or the source oriented monitoring efforts that are needed.

Limitations exist with any monitoring system; not all environmental information needs can be met by any one given monitoring effort. These limitations should be discussed. For example, if the network or monitoring system design is stratified to develop a national baseline but not to target on potential hot spots or localized concentrations, or if monitoring is for hot spots or priority areas and not for an overall baseline, this should be made clear. If exposure to pesticides is being monitored by an adipose network, it should be made clear what pesticides can be detected using that network and how or whether the program plans to track pesticides that would not show up using that method (e.g., plans to analyze for metabolites in body fluids).

SECTION 3: OUTLINE THE PROGRAM'S PLAN FOR MONITORING TO MEET THESE NEEDS

This section should clearly identify the program's priorities for the current and proposed monitoring activities described above. (Provide the relative priority and approximate costs of each program in terms of personnel and contract dollars.) Programs should indicate priorities in two ways: (1) assuming existing approved levels of program resources, including transfers of resources into or out of monitoring activities; and (2) assuming some additional resources. The strategies should clearly indicate alternatives regarding allocation of resources to monitoring.

The quality assurance project plans that are required and their status should be referenced. For each monitoring effort, the title and date of issuance of completed quality assurance project plans should be included. If quality assurance plans have not been prepared, the schedule for completion of the project plans should be included.

SECTION 4: DESCRIBE HOW DESIGN, SAMPLING HANDLING, CHEMICAL ANALYSIS, DATA ANALYSIS AND DATA PROCESSING WILL BE CARRIED OUT TO ASSURE (1) REPRESENTATIVENESS AND (2) QUANTIFICATION OF OVERALL ERROR BOUNDS

The strategy should include sufficient detail about how the monitoring will be conducted to give the reader a clear understanding of the data that will be produced by the effort.

It is important that the representativeness and the confidence one can expect in the data be as clear as possible.

SECTION 5: DESCRIBE LINKAGES WITH OTHER PROGRAMS, INCLUDING MONITORING PROGRAMS, CRITERIA AND STANDARDS, RISK ASSESSMENT AND ENFORCEMENT; DESCRIBE LINKAGES WITH OTHER FEDERAL AGENCIES

There are several areas where improved coordination would be very beneficial. Some linkages may have already been established between or among monitoring programs and need only be described in the strategy. Other coordination efforts need to be developed and clarified. The strategies should address the areas that generally need better coordination and provide specific plans for improving coordination. The areas to be covered are:

- Intra-Program Coordination. Monitoring activities within programs that potentially should be better coordinated include a program's monitoring to support criteria and standards, risk assessment and enforcement activities within a program or across programs.

- Inter-Program Coordination. Perhaps the greatest short-term opportunities for improved coordination are inter-program monitoring of ground water contaminants by the Drinking Water, RCRA, and Superfund programs, and coordination of toxic air pollutant monitoring and data reporting among the Air, RCRA, and Superfund programs.

- Coordination among Federal agencies. Some legislation is very specific about establishing coordination among different Federal agencies. The Clean Water Act and Federal Insecticide, Fungicide, and Rodenticide Act state this clearly. Other legislation, while not as specific, also requires coordination, such as between Superfund and the Centers for Disease Control. In general, Federal monitoring is not well coordinated despite significant potential benefits.

- o Research and Development Support. Each program office will need to identify the research support it will need from ORD. ORD should address analytical methods development, development and distribution of quality control samples, development of standard reference materials through the National Bureau of Standards, development of anticipatory monitoring networks, and monitoring for developing models as well as other areas.

- o Technical assistance to the States. What technical assistance is needed by the States in order to help ensure that programs can be carried out?

  - Lab support for the more difficult samples
  - Training
  - Quality control assistance

- o EPA Regional labs and field support. What lab and field support do the Regions need to provide to carry out the monitoring objectives? This support should be stated specifically enough to be used in planning equipment purchases and staffing.

- o Contract support. The contract support that is planned to support monitoring should be described, including the provisions for ensuring the quality control of the data.

SECTION 6: IDENTIFY TECHNICAL BARRIERS, ISSUES, AND OPPORTUNITIES

Many monitoring efforts can be envisioned that can not be readily implemented due to lack of appropriate analytical procedures or other technical limitations. Also, opportunities may exist for collecting data more directly related to a program's needs by developing or incorporating new techniques.

This section should clearly identify any barriers, issues, and opportunities so that they can be dealt with as systematically as possible.

SECTION 7: CLARIFY THE RESPECTIVE RESPONSIBILITIES OF VARIOUS HEADQUARTERS OFFICES, THE REGIONS, AND STATE AND INCLUDING LOCAL PROGRAMS

It will become increasingly important to clarify the respective roles and responsibilities of EPA Headquarters, Regional Offices, and State and local agencies. This will be particularly important for State and local agencies, since many States and communities have multiple agencies responsible for EPA monitoring, which can further complicate coordination.

SECTION 8: IDENTIFY DATA PROCESSING AND DATA ANALYSIS TASKS

In order to ensure that the monitoring data collected are used most effectively, programs should develop a strategy for using environmental data and explain how data will be stored and made accessible to users, and how such data will ultimately influence program management.

- o Programs should describe existing and planned storage systems for environmental data, including current problems.
  - What system will be used to store data from each monitoring activity or network?
  - Who will input the data and how often will this be done?
  - What problems have there been?
- o Programs should describe current and needed data processing and data analysis capability.
  - What types of analyses are and will be conducted with the data? Who will carry out the analyses and how often?
  - How will data be made accessible and to whom?
  - How compatible are systems within a program? With the systems of other programs?
- o Programs should explain how the data supports program management.
  - How will the results of analyses be used?
  - What types of reports will result from the analyses? For whom are they prepared?
- o Where programs have identified potential and existing multiprogram use of monitoring data, the strategy should describe how data storage, retrieval, and analysis will be coordinated to support multiprogram application.

SECTION 9: PROVIDE A SCHEDULE FOR IMPLEMENTATION

The strategy should be written specifically enough so that once Sections 1 through 4 have been completed, milestones can be identified and included in the Strategy. Some of the milestones may relate to developing networks, some to completing final products, and some to assessing compliance of a certain class of sources. Some of the final products may be more than a year in the future; interim milestones should be included.

APPENDIX: COST AND OTHER RELEVANT RESOURCE ISSUES

In order for information to be available in development of the FY 1986 Agency budget, programs should include in a separate section (not for Agency-wide distribution) a more detailed presentation of their resource needs. This section should elaborate on the costs described in Section 2, and discuss costs of monitoring activities and relative priorities. Ideally, costs should be described in terms of funding, positions, extramural funding, and State grant funding. The costs should be identified in terms of planning, field efforts and sampling, laboratory support, data handling, quality assurance, data analysis, and data interpretation. (Guidance for this appendix needs to be developed with the Comptroller's Office.)